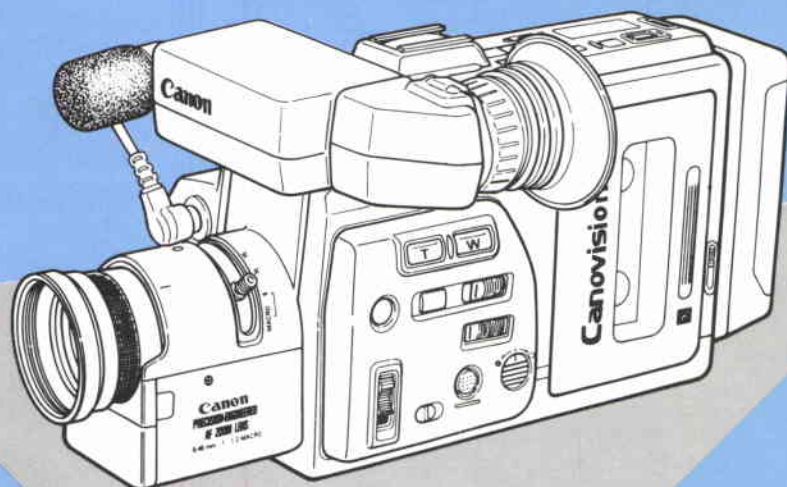


Canon

23/19-180
8

VM-E2

8mm VIDEO CAMERA & RECORDER



E

INSTRUCTIONS

FEATURES

- ★ **Canon f1.2, 6X power zoom lens with macro**
- ★ **Advanced CCD image sensor**
- ★ **Flying erase head for noise-free transitions**
- ★ **Active autofocus**
- ★ **Auto exposure**
- ★ **Fully automatic white balance**
- ★ **AFM Hi-Fi sound**
- ★ **Push button auto fade**
- ★ **Low light recording - as low as 8 lux**
- ★ **3-hour recording capability**
- ★ **Instant playback in the viewfinder**
- ★ **Comprehensive system accessories**

Thank you for purchasing the Canon VM-E2. The VM-E2 is a single-unit video camera & recorder designed in the 8mm format. Please use only P-5 type video cassettes bearing the **8 mark with this unit.**

•Recordings made with this unit cannot be played back on any video equipment except 8mm units.

One of the following power source components is required for camera recording and playback.

- Canon Battery Pack BP-E22/BP-E22E
- Canon Compact Power Adapter CA-E2
- Canon Car Battery Adapter CB-E2

CAUTION:

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING:

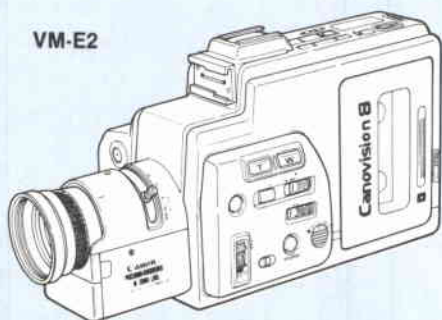
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

CAUTION:

TO PREVENT FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

Please check that this package contains the following items:

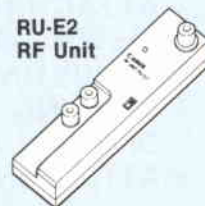
VM-E2



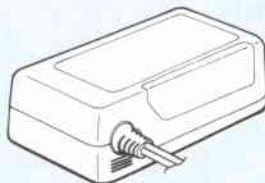
VF-E2
Electronic Viewfinder



RU-E2
RF Unit



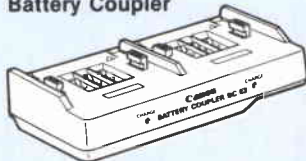
CA-E2
Compact Power Adapter



SS-E2
Shoulder Strap



BC-E3
Battery Coupler



BP-E22/BP-E22E
Battery Pack*



Lens Cap



*No difference exists between the BP-E22 and BP-E22E Battery Packs.

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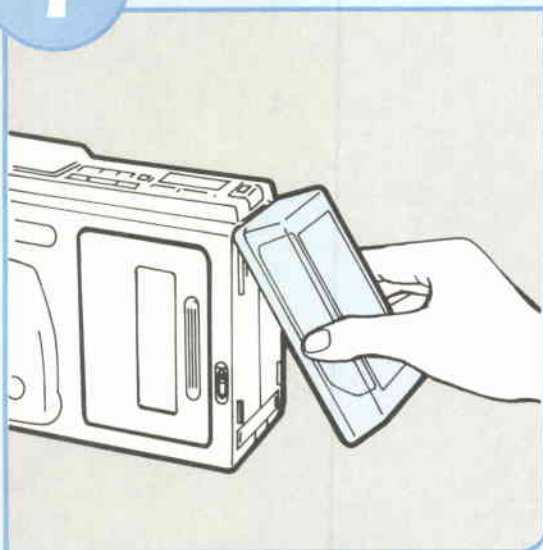
BASIC OPERATION

CAMERA RECORDING

(For more detailed recording procedures, see P. 19)

1

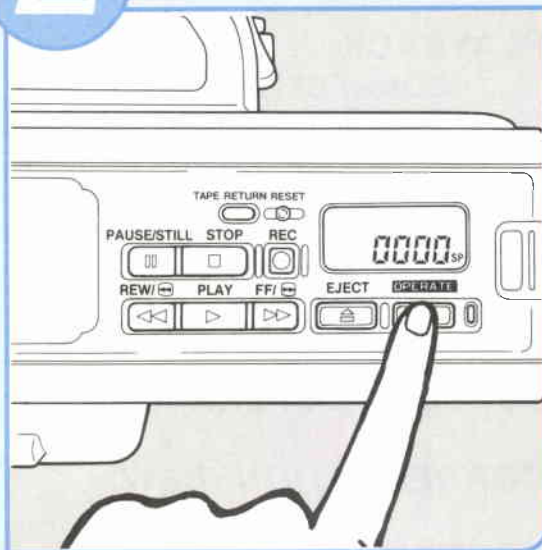
Attach battery pack.



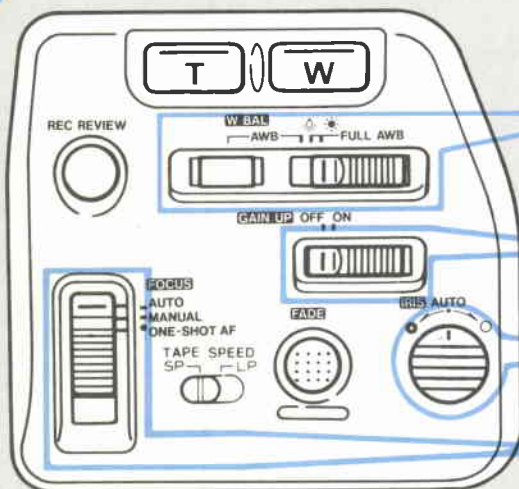
• The battery should be fully charged before use.

2

Press Operate Button.



5



Set White Balance Selector to FULL AWB
☀, indoors or ☀, outdoors

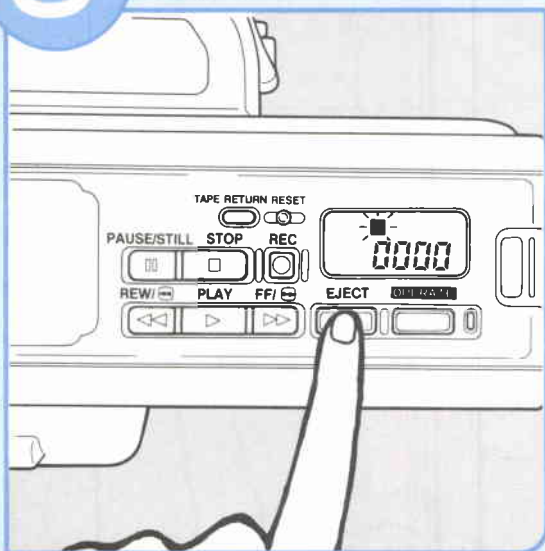
Set Gain Up Switch to OFF.

Set Iris Control Dial to AUTO.

Set Focus Selector to AUTO.

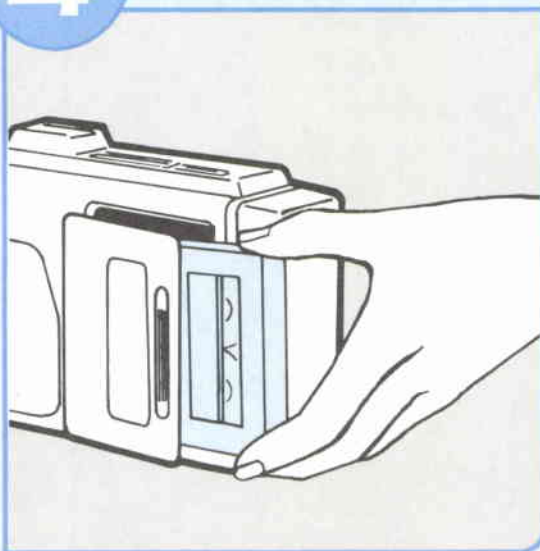
3

Press Cassette Eject Button.



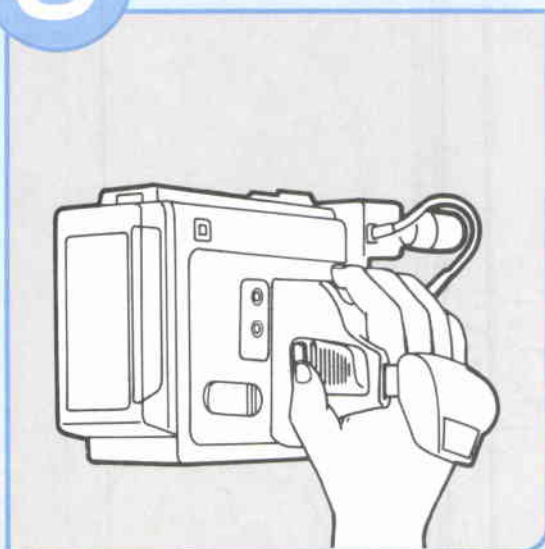
4

Load video cassette.



6

Press Start Button.



• To stop recording temporarily, press start button once again.

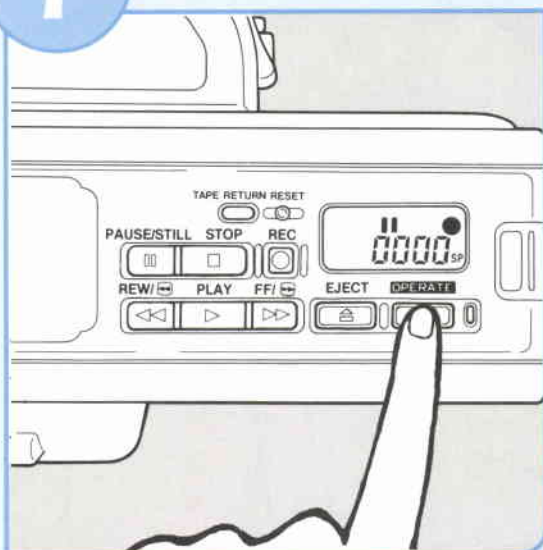
BASIC OPERATION

PLAYBACK

INSTANT PLAYBACK — THROUGH THE VIEWFINDER

1

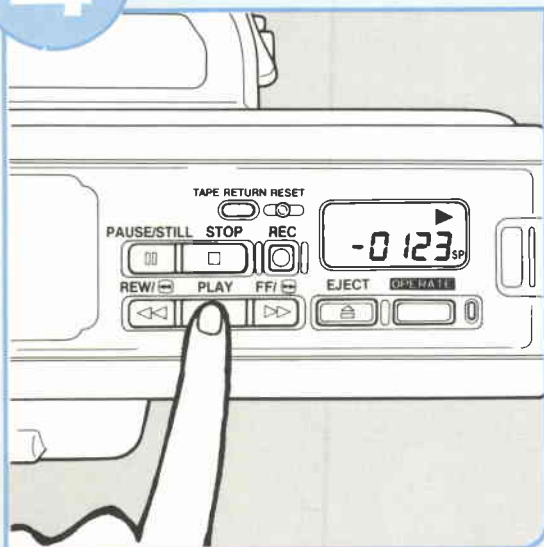
Press Operate Button.



• The battery pack should be fully charged before use.

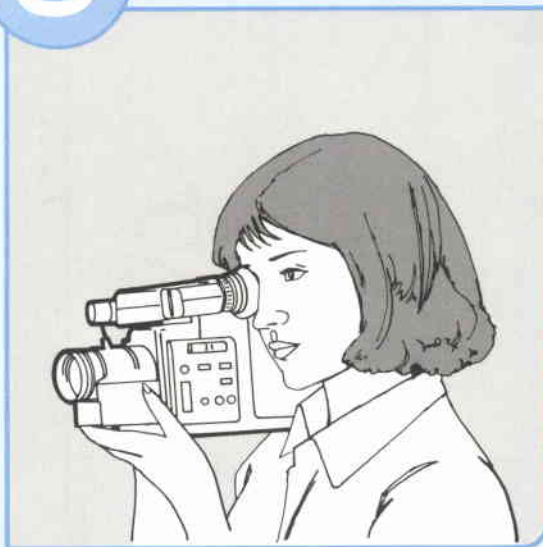
4

Press Play Button.



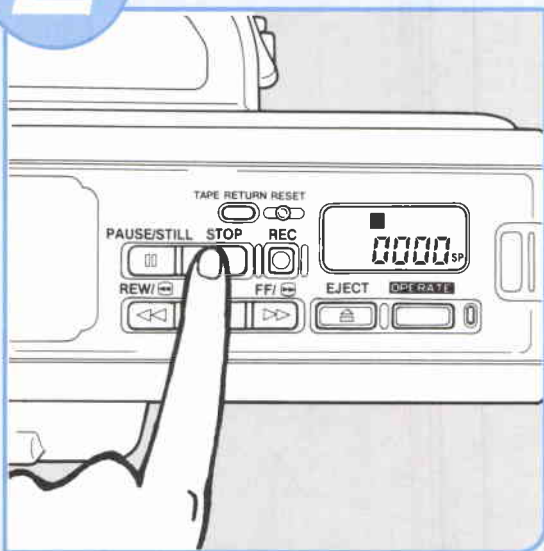
5

View playback picture
through the viewfinder.



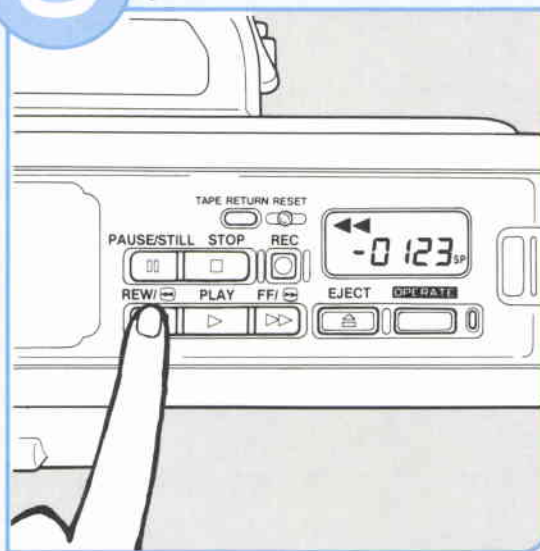
2

Press Stop Button.



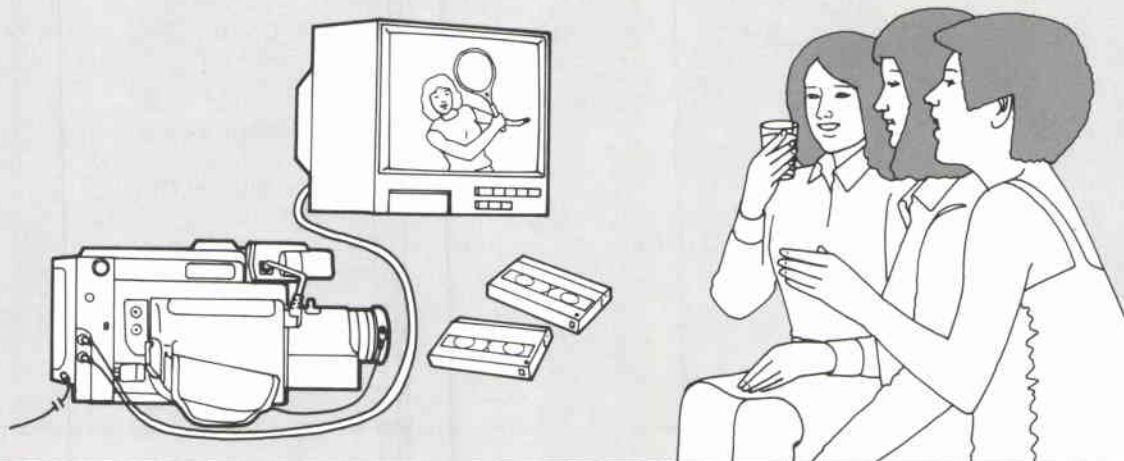
3

Rewind tape to desired point.



REGULAR PLAYBACK — ON TV

The RU-E2 RF Unit is necessary for playback on TV. See P. 35 for connection procedures.



NOMENCLATURE

TOP PANEL

Tape Return Button

→ P. 40

Stop Button

Pause/Still Button

Rewind/Review Button → P. 39

Play Button

Fast Forward/Search Button → P. 39

Power Zoom Buttons
→ P. 29

EVF Shoe
→ P. 17

Zooming Lever
→ P. 29

EVF Socket

Focusing Ring
→ P. 27

Lens

Lens Hood

Autofocus Window
→ P. 28

Record Review Button
→ P. 23

Focus Selector
→ P. 27

Tape Speed Selector
→ P. 21

TAPE RETURN RESET

PAUSE/STILL

STOP

REC

REW/

PLAY

FF/

EJECT

OPERATE

Record Button

Counter Reset Button

Information Display → P. 11

Operate LED

Operate Button

Cassette Eject Button

Shoulder Strap Attachment Bars

Battery Eject Switch
→ P. 14

Cassette Compartment

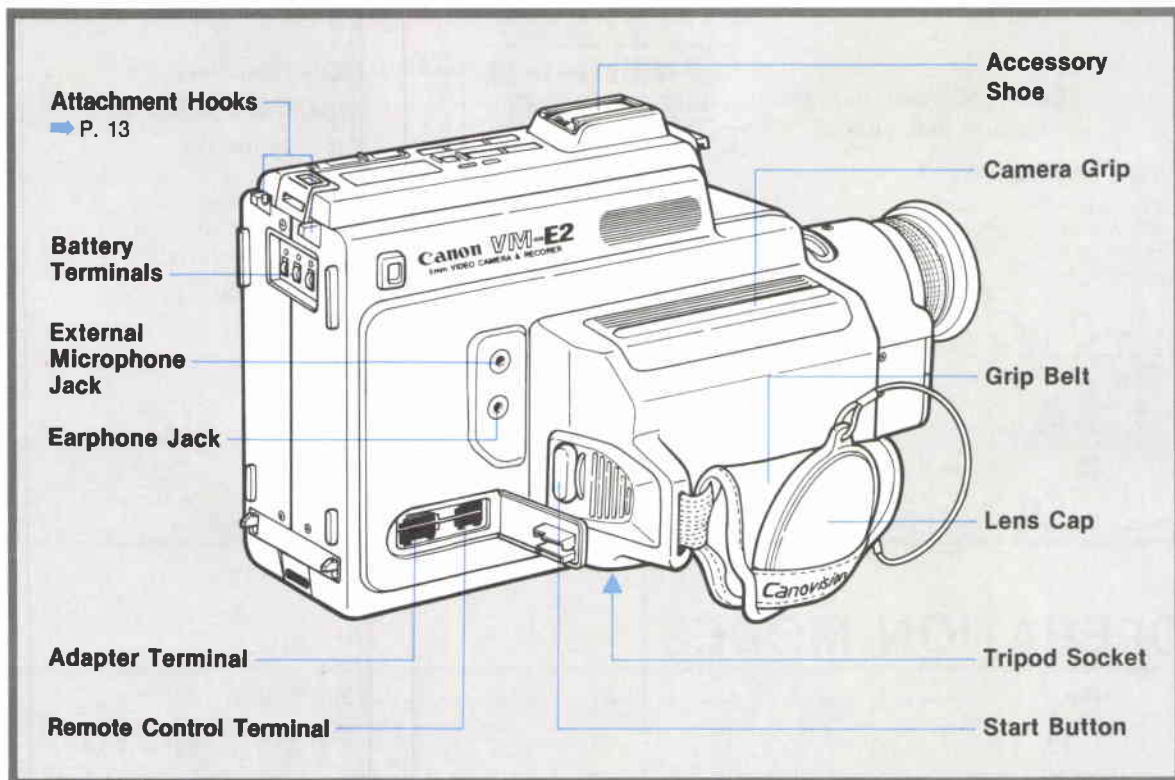
Iris Control Dial
→ P. 33

Gain Up Switch
→ P. 20

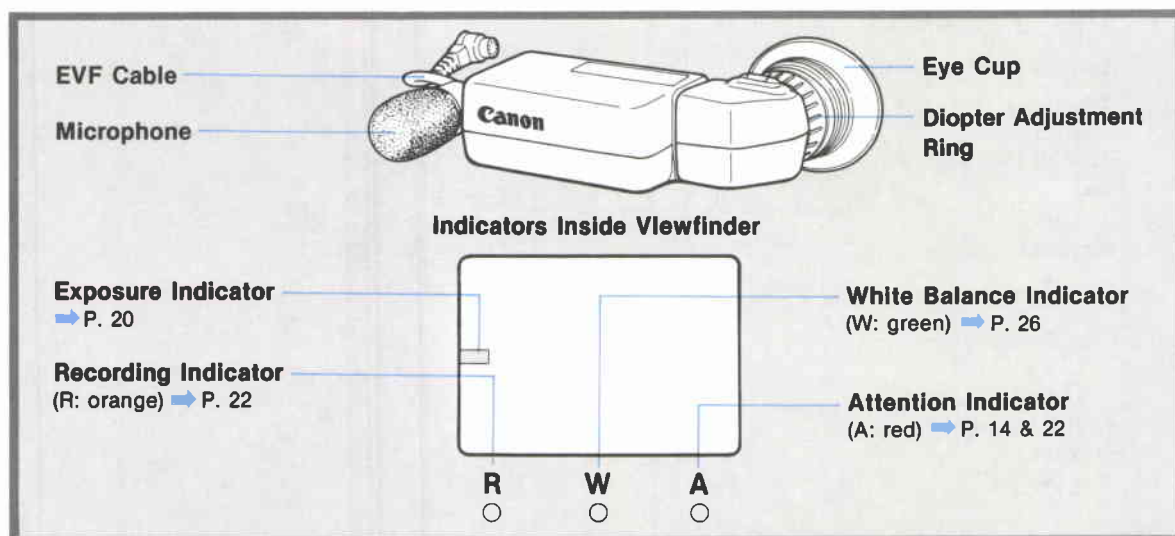
White Balance Selector
→ P. 25

Fade Button → P. 33

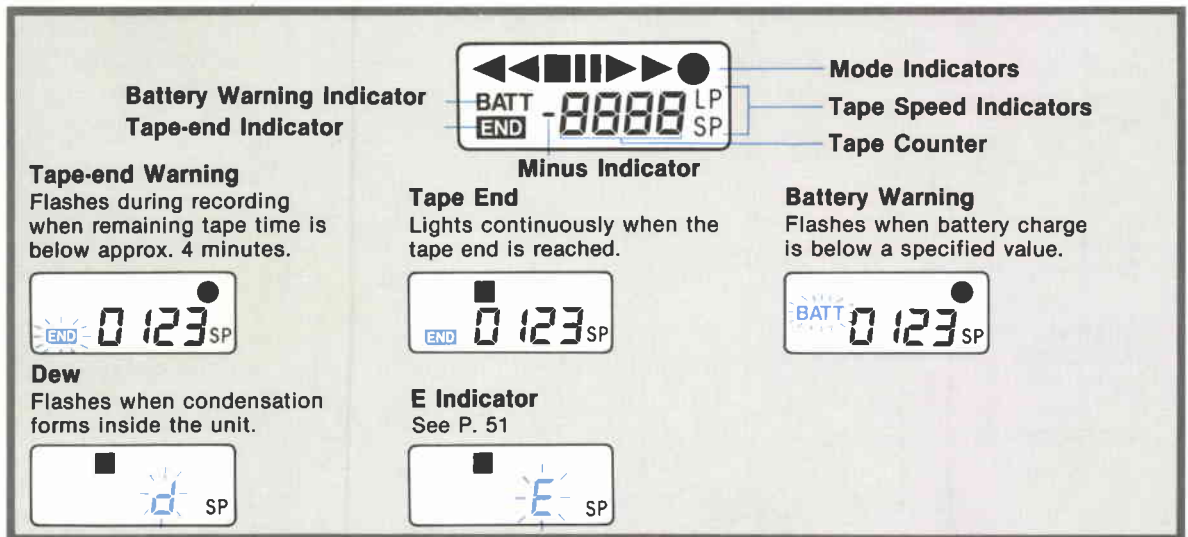
AWB Button → P. 25



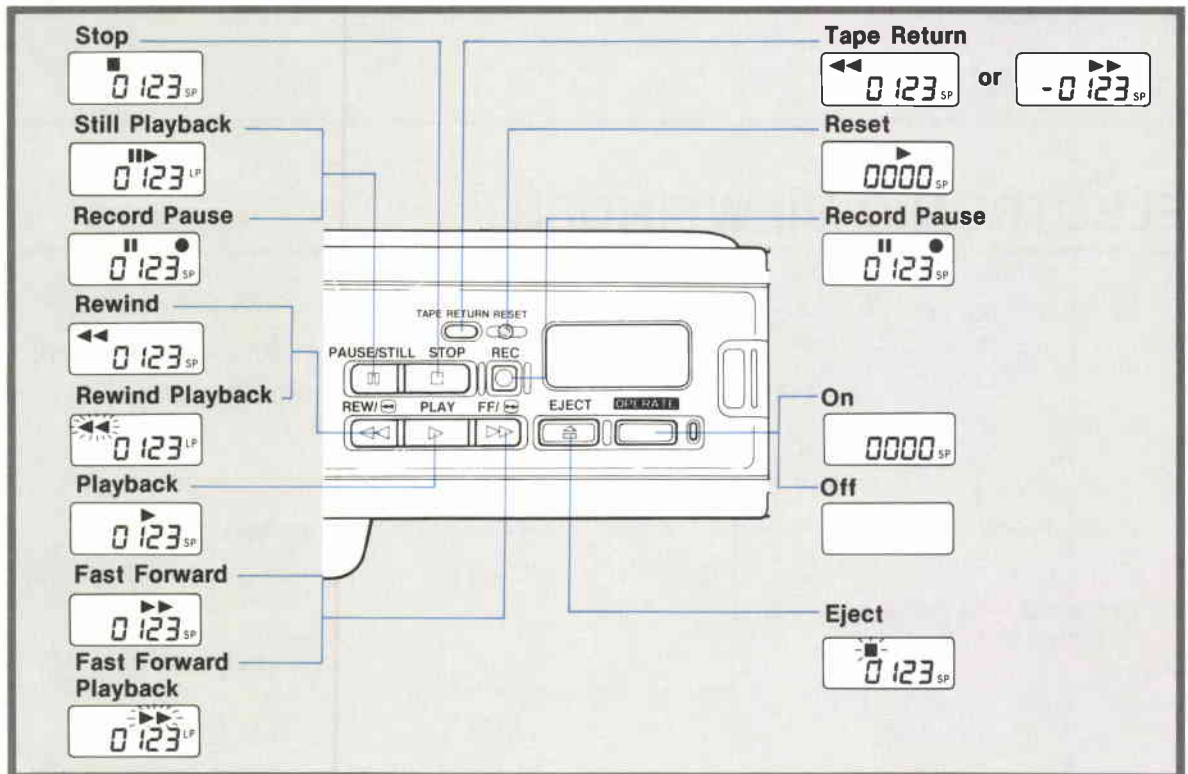
ELECTRONIC VIEWFINDER



INFORMATION DISPLAY



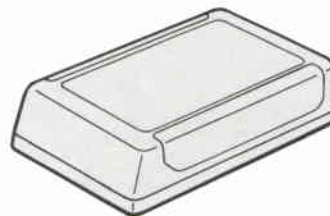
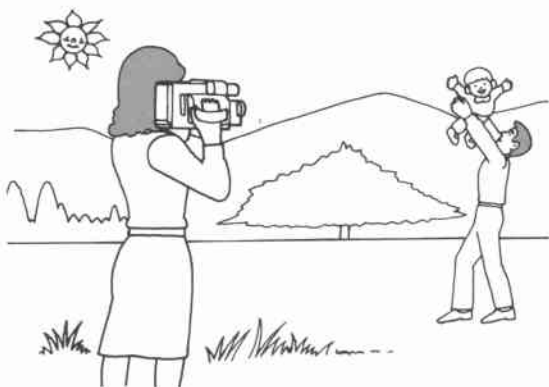
OPERATION MODES



POWER SOURCES

Use the power source that best fits the recording location.

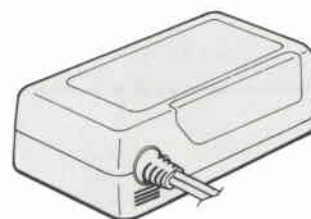
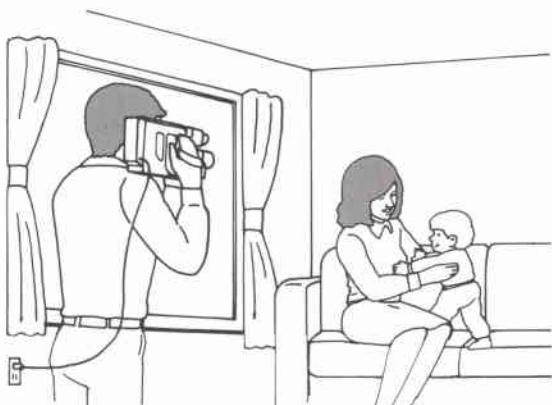
For active recording: → **BP-E22/BP-E22E
Battery Pack***



Continuous recording time: Approx. 90 minutes

*There is no difference between BP-E22 and BP-E22E.

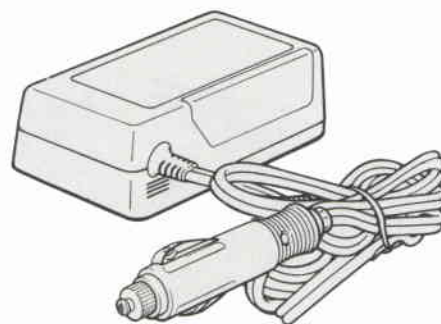
For recording using AC power: → **CA-E2 Compact Power Adapter**



Input voltage: 100-240V AC

**For recording using the car
battery:**

→ **CB-E2 Car Battery Adapter**

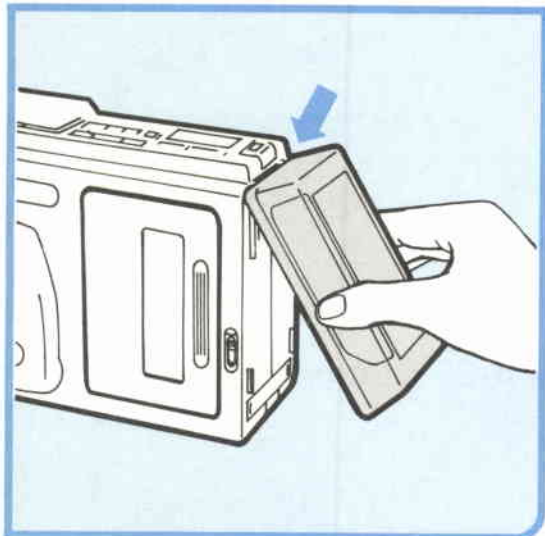


For use with 12 or 24V DC negative-ground car battery only.

TO ATTACH

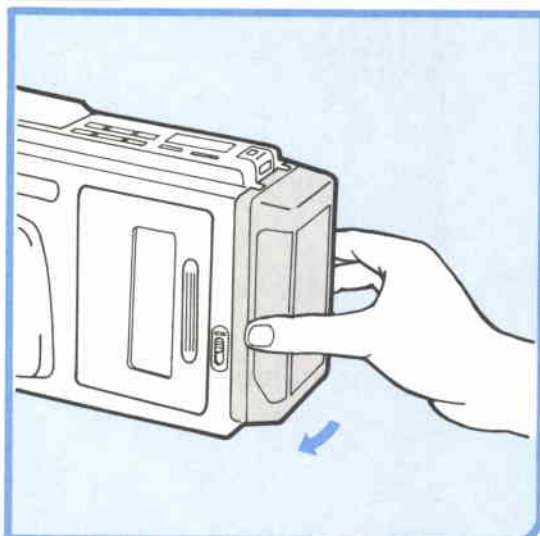
1

Hook the power source onto the attachment hooks.

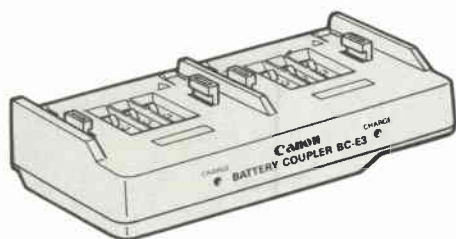


2

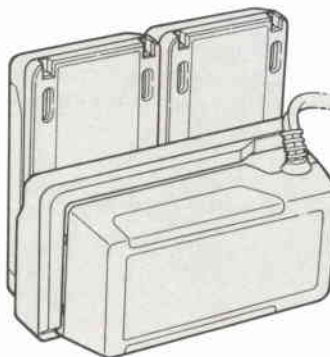
Press the power source against the VM-E2 until it clicks (locks) into place.



CHARGING THE BATTERY PACK



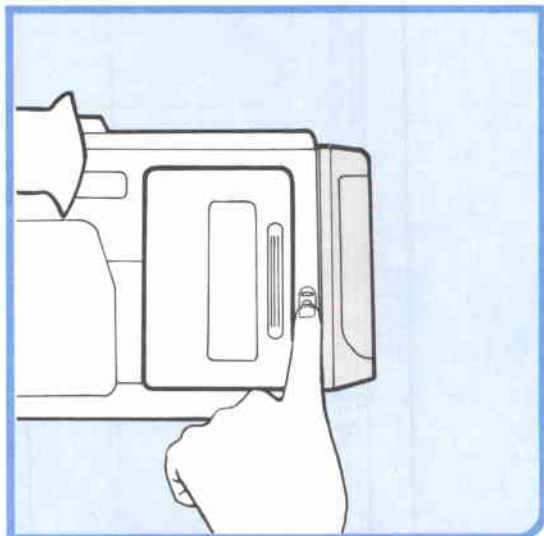
The BC-E3 Battery Coupler can charge two battery packs in rapid succession, using either the CA-E2 or CB-E2 as the power source. The BP-E22 / BP-E22E recharges in approximately 100 minutes.



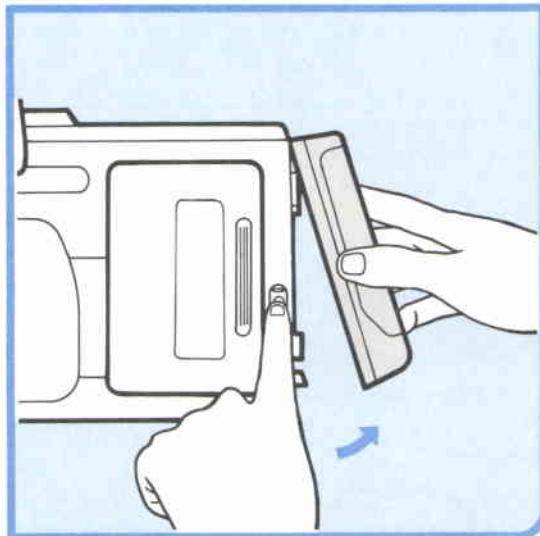
• For details on charging procedure, see the BC-E3 instruction manual.

TO REMOVE

- 1 Slide the battery eject switch downward.



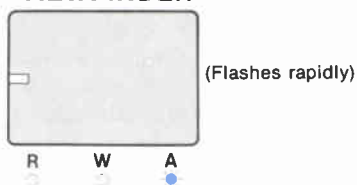
- 2 Without releasing the switch, remove the power source (lower end first).



BATTERY WARNING

The warning indicators appear when the battery charge drops below a specified amount.

VIEWFINDER



INFORMATION DISPLAY



Notes:

- Before disconnecting the power source: Always stop operation of the VM-E2 and press the operate button to turn the VM-E2 off before making any disconnections.
- Make sure the battery pack is fully charged before use.
- Always remove the battery pack before storing the VM-E2.
- Cassette eject and mode change (record pause to record) are impossible when warning indicators appear.

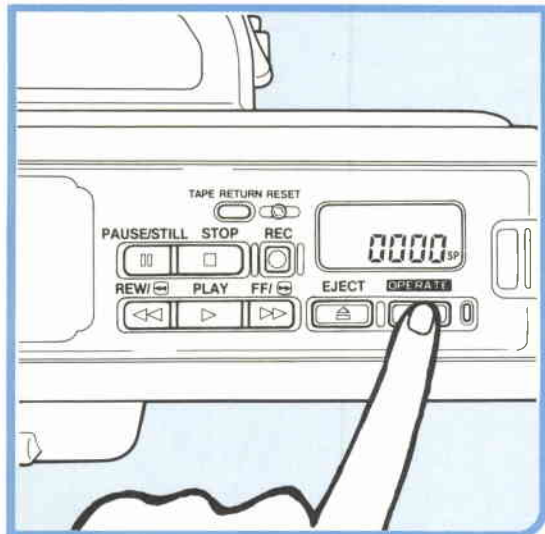
THE VIDEO CASSETTE

Use only P-5 type 8mm video cassettes bearing the **8** mark with this unit. Please note that these cassettes cannot be reversed for recording on the opposite side.

LOADING THE VIDEO CASSETTE

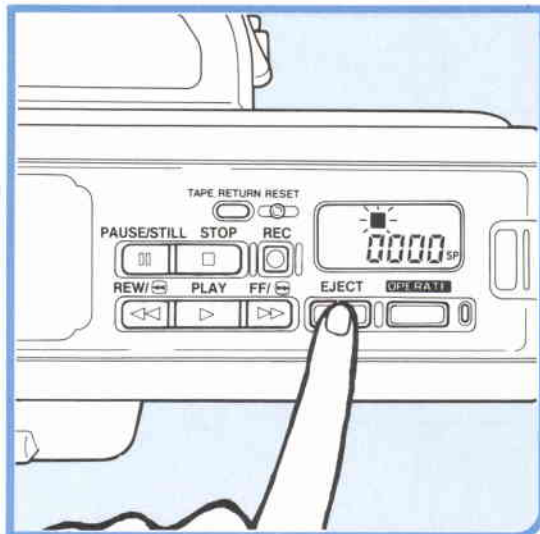
1

Press the operate button.



2

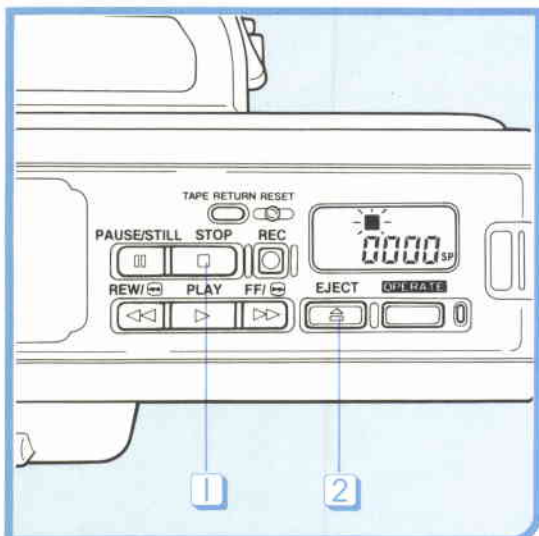
Press the cassette eject button.



UNLOADING THE VIDEO CASSETTE

1 Press the stop button.

2 Press the cassette eject button.

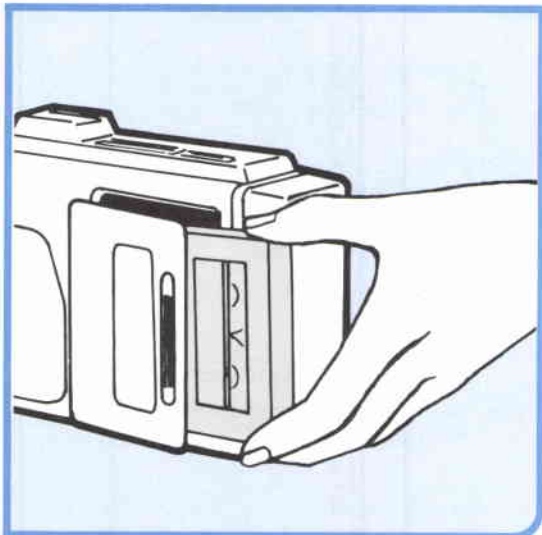


Notes:

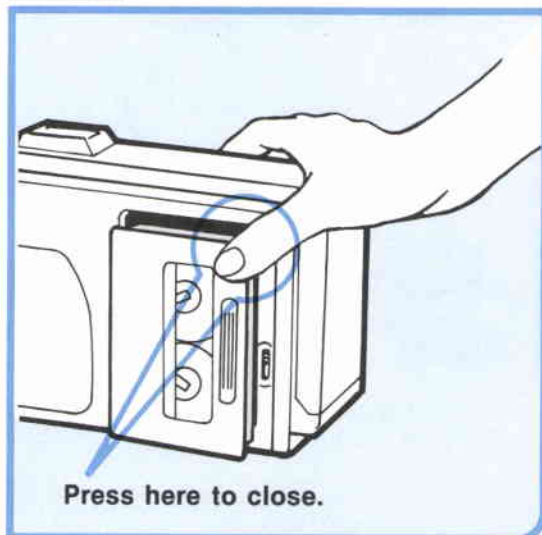
- Remove the cassette before storing the VM-E2.
- Do not use cassettes with damaged or spliced tape, or ones that do not meet the standards.
- There are several holes on the cassette back which are used for transferring information. Do not cover them with tape, etc.
- The tape counter resets automatically whenever a cassette is loaded.

3

Load the video cassette (with label facing out).

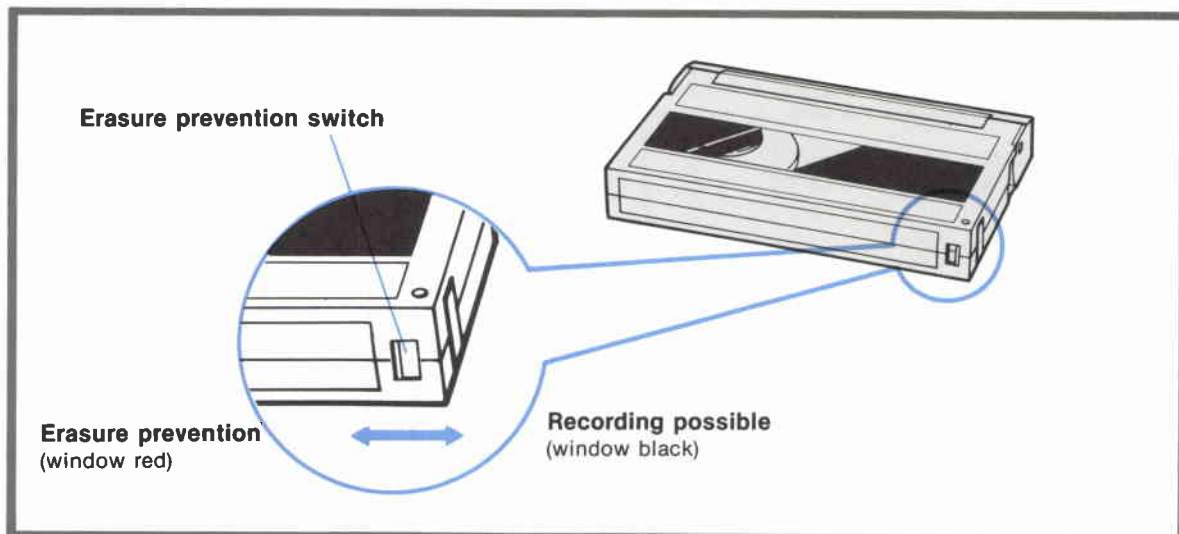
**4**

Close the cassette compartment.



THE CASSETTE ERASURE PREVENTION SWITCH

To prevent accidental erasure of recorded material, slide the switch at the rear of the cassette as shown below. If the switch is returned to its original position, recording can be executed once again.



- The above description is for Canon 8mm video cassettes only. For other maker's cassettes, refer to their instructions for erasure prevention.

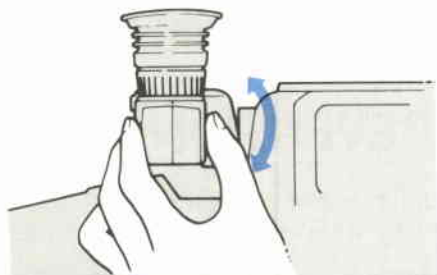
CAMERA PREPARATIONS

ATTACHING THE ELECTRONIC VIEWFINDER

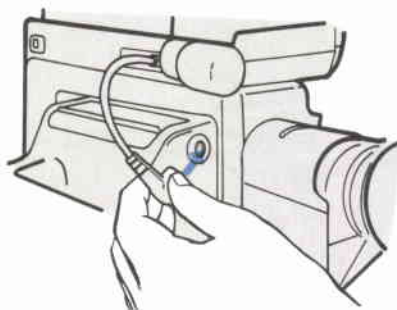
- 1 Match the viewfinder with the EVF shoe and then slide the viewfinder in the arrow direction until it clicks into place.



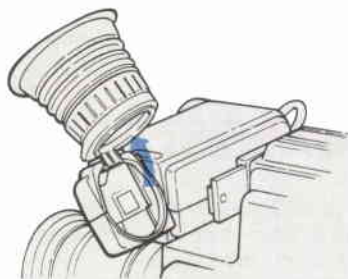
The viewfinder eyepiece can be rotated up to 180°. Set it to the most comfortable position.



- 2 Connect the EVF cable to the EVF socket.

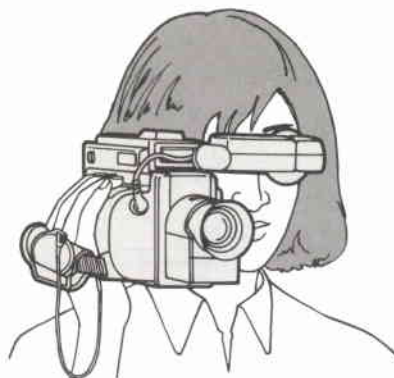


The eyecup can be opened for easier viewing of the viewfinder screen. This is especially useful for eyeglass wearers.

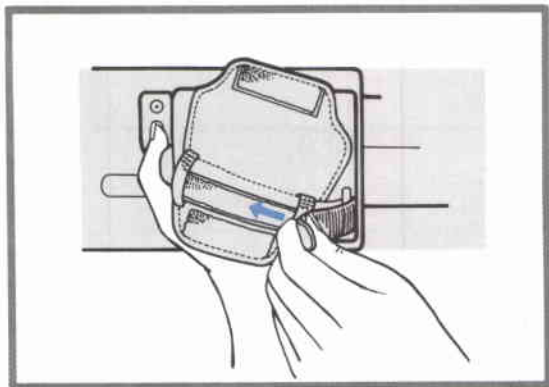


VIEWING WITH YOUR LEFT EYE

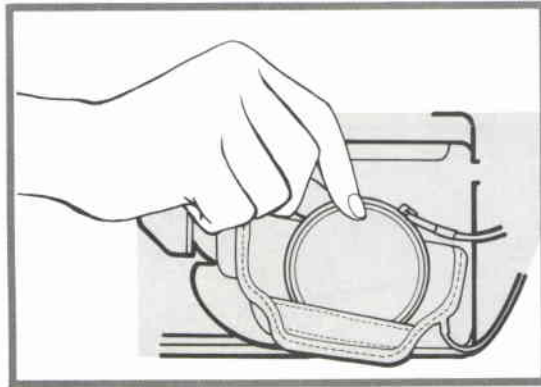
The EVF Extension Arm II (optional accessory) enables you to use your left eye for viewing through the viewfinder.



ADJUSTING THE GRIP BELT



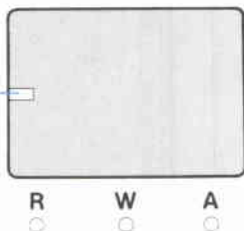
STORING THE LENS CAP



DIOPTER ADJUSTMENT

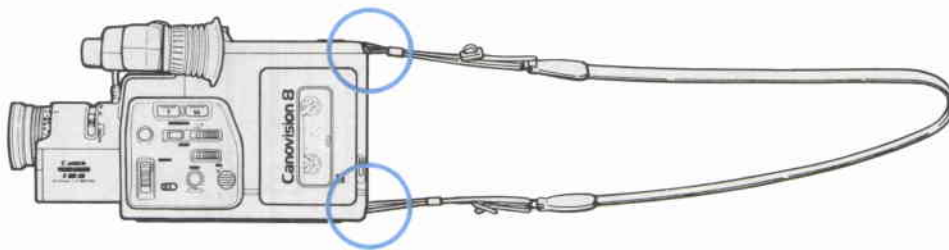
The viewfinder lens can be adjusted for individual eyesight correction. Simply look through the viewfinder and turn the diopter adjustment ring until the exposure indicator is clearly visible.

Exposure
indicator



ATTACHING THE SHOULDER STRAP

Attach the shoulder strap to the shoulder strap attachment bars and adjust it to the most comfortable length.

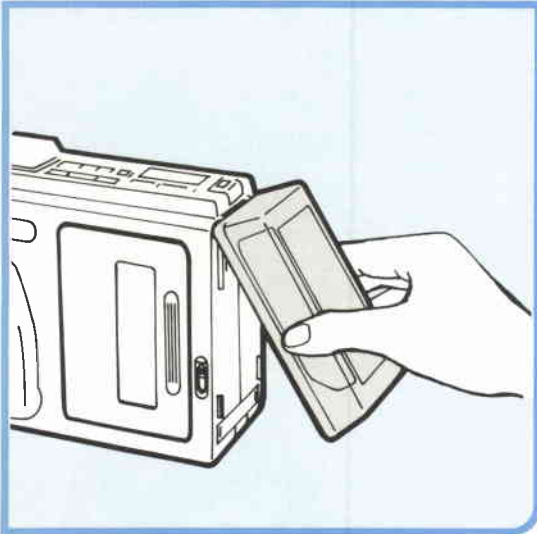


CAMERA RECORDING

RECORDING PROCEDURE

1

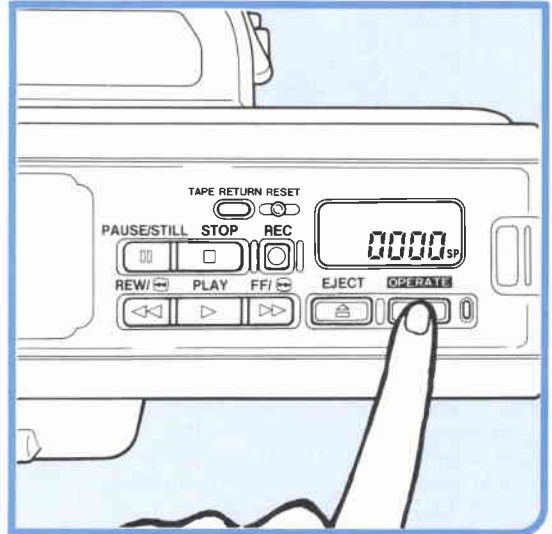
Attach the power source.



• The battery pack should be fully charged before use.

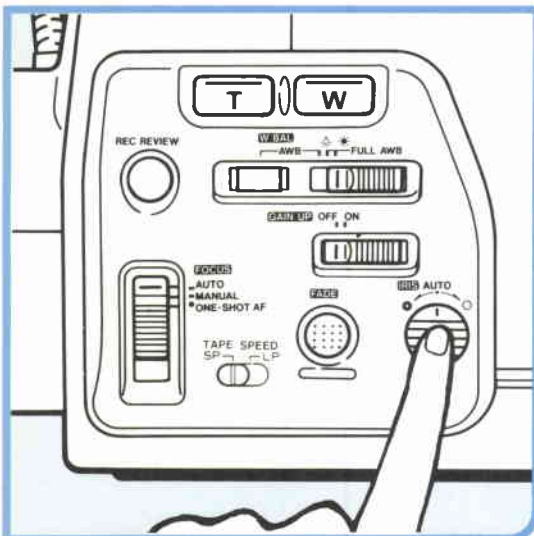
2

Press operate button: ON



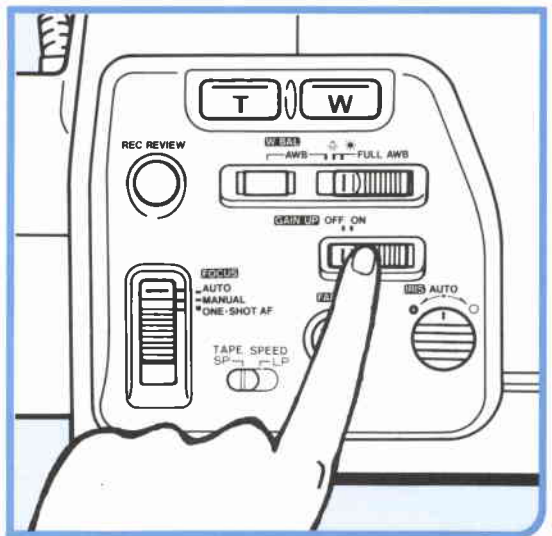
5

Set the iris control dial to AUTO.



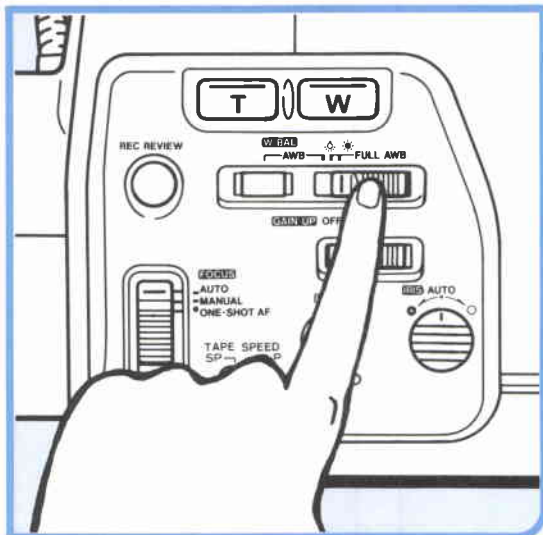
6

Set the gain up switch to OFF.



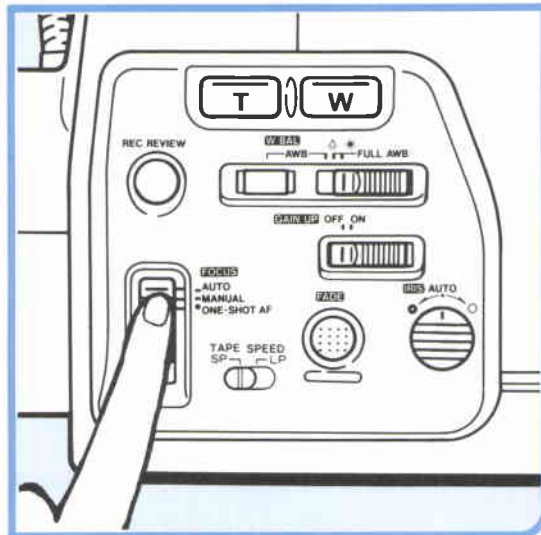
3

Set the white balance selector to **FULL AWB** ☼ or ☀.



4

Set the focus selector to **AUTO**.



7

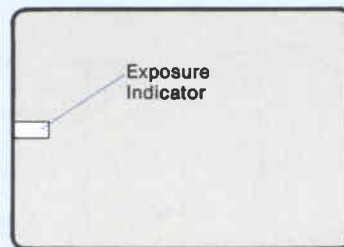
Adjust the diopter.



8

Confirm that the exposure indicator is near the centre position.

• If the indicator is in an extremely high position, it means that the subject is excessively bright. Use an optional ND filter for best results.

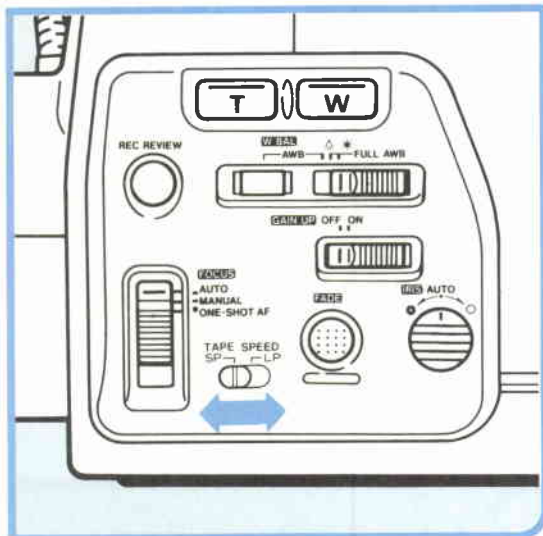


R **W** **A**

• If the indicator is in an extremely low position, lighting is insufficient. Set the gain up switch to ON or use additional lighting.

9

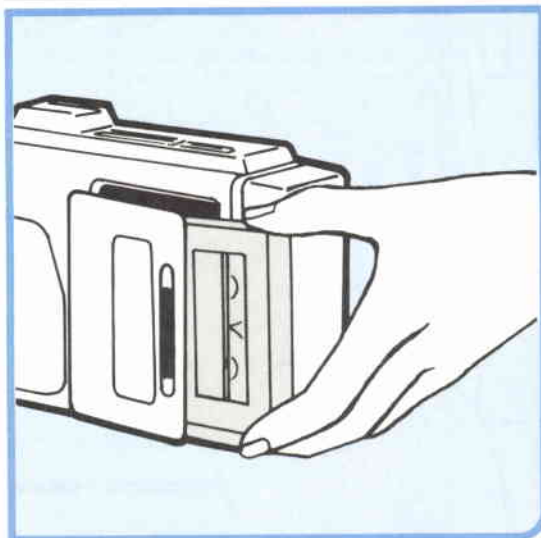
Select tape speed: SP or LP.



- SP: Standard recording time
- LP: Double recording time

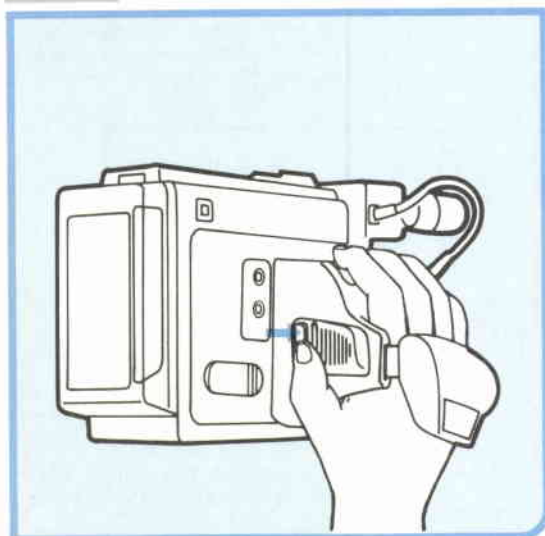
10

Press the cassette eject button and load the video cassette.



12

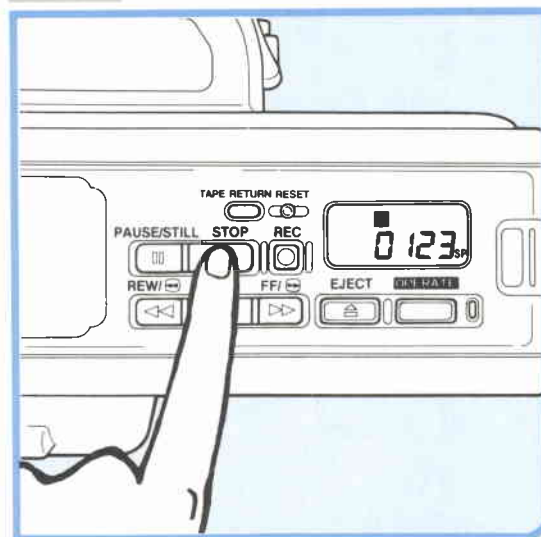
To stop recording temporarily, press the start button.



- Press the start button again to resume recording.

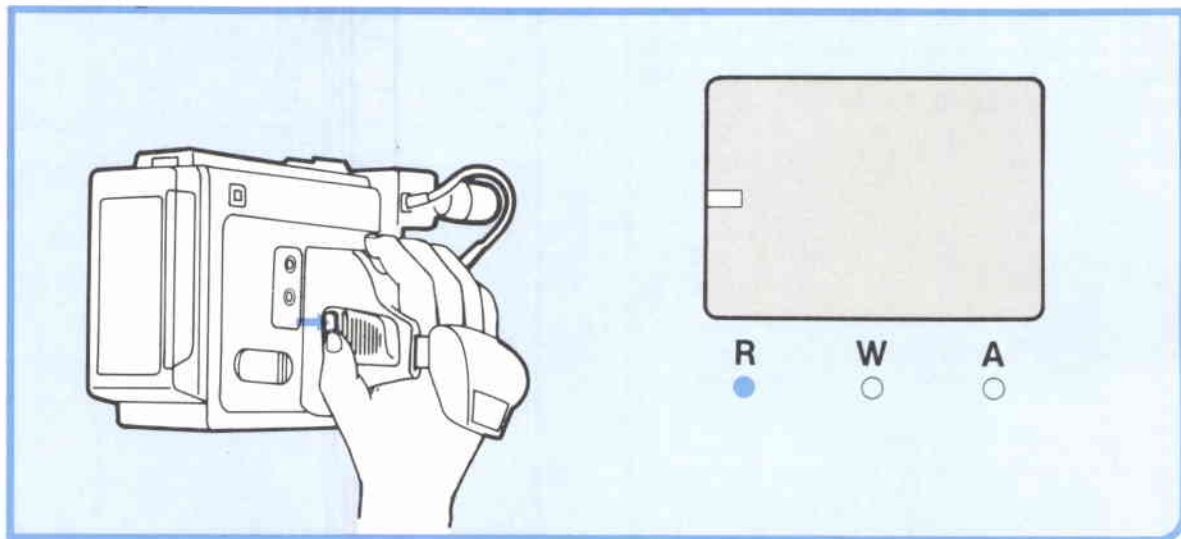
13

When recording is complete, press the stop button.



11

Press and release the start button to start recording.

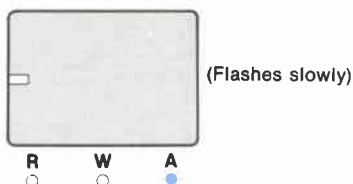


- Recording will also start if you press the pause/still button.
- The orange recording indicator "R" will light up in the viewfinder when recording starts.

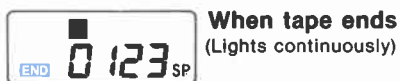
TAPE-END WARNING

The warning indicators appear when there are less than approx. 4 minutes left on the tape for recording.

VIEWFINDER



INFORMATION DISPLAY



Note:

- When using a battery pack, power is automatically turned off if the record pause mode lasts for more than 7 minutes. When using any other power source, the unit will automatically enter the stop mode. To start recording again from the stop mode, first press the record button and then the start button.

ASSEMBLY EDITING

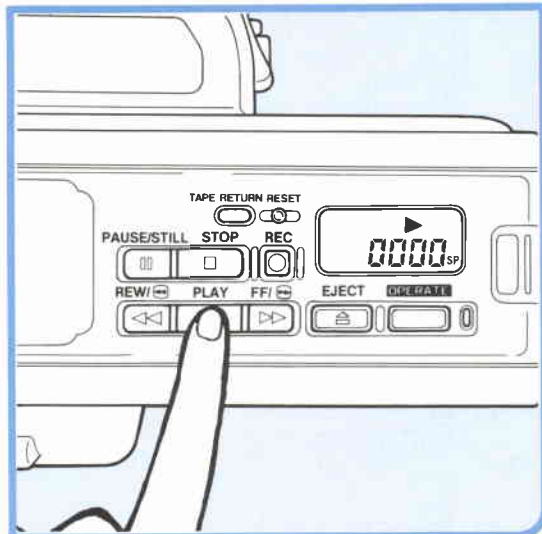
The VM-E2 automatically edits the tape for noise-free transitions between takes as long as the tape remains loaded, even if the power is turned off.

WHEN THE CASSETTE HAS BEEN UNLOADED

To continue recording on a cassette which has been unloaded once, load the cassette and proceed as indicated at right.

1

Press the stop button, then press the play button.



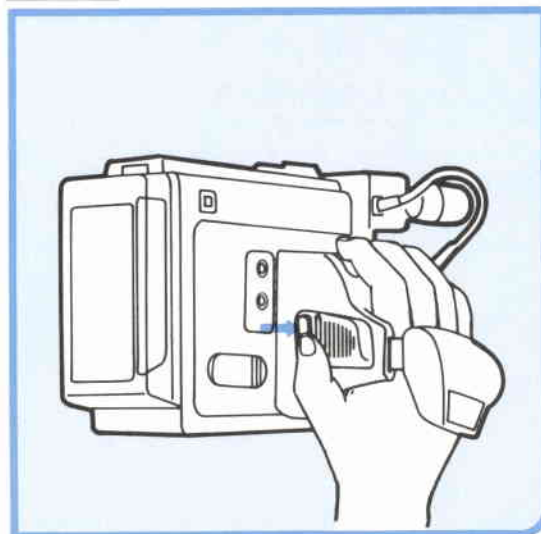
- While monitoring through the viewfinder, use the search and review functions to locate the point where the new recording will begin. See P. 39

RECORDING CHECK (Using the Record Review Button)

When recording has been stopped temporarily, the last segment of the recorded scene (approx. 5 seconds) can be played back in the viewfinder.

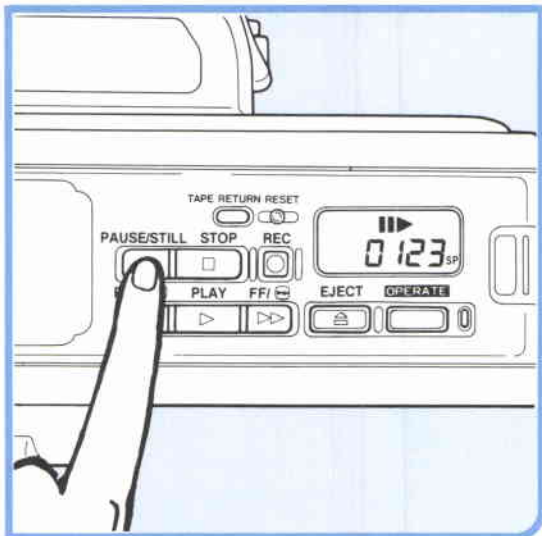
1

Place the VM-E2 in the record pause mode.



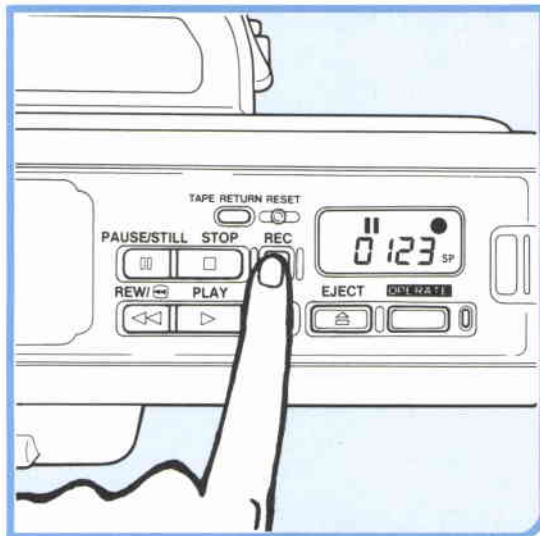
2

At the point where the new recording will begin, press the pause/still button.



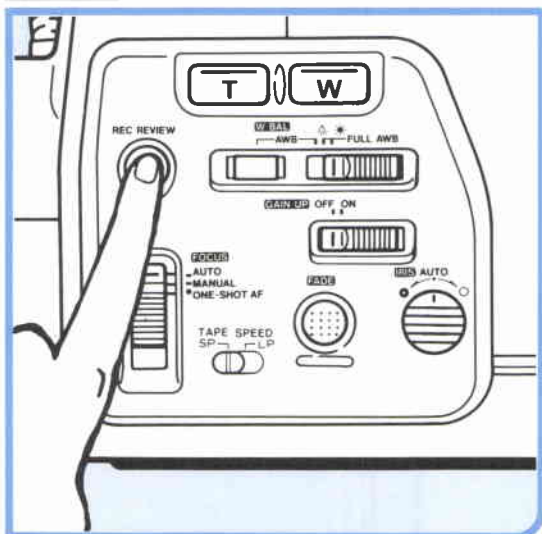
3

Press the record button then the start button to start recording.



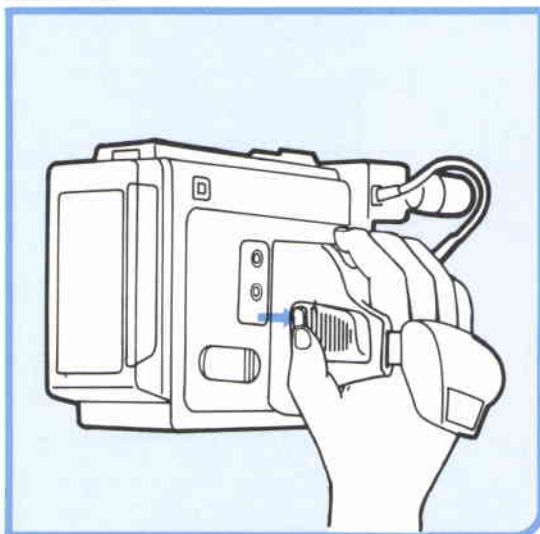
2

Press the rec. review button and view the scene in the viewfinder.



3

Press the start button to resume recording.



• Recording starts from the exact point where it left off.

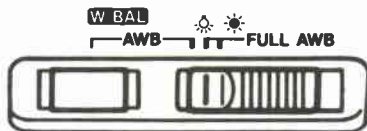
WHITE BALANCE

White balance adjustment is necessary to make white subjects look white, and to obtain natural colours in a recording. This unit is equipped with Full-auto and Auto White Balance Adjustment. Under normal conditions, use Full-auto Adjustment.

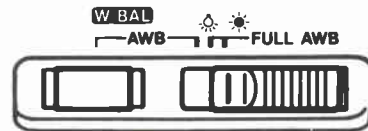
FULL-AUTO ADJUSTMENT

Set the white balance selector to FULL AWB ☀ or ☀ .

Set to ☀ for indoor recording
(fluorescent, tungsten or neon lighting, or when shooting at night — a fireworks display, for example)



Set to ☀ for outdoor recording
(sunlight)

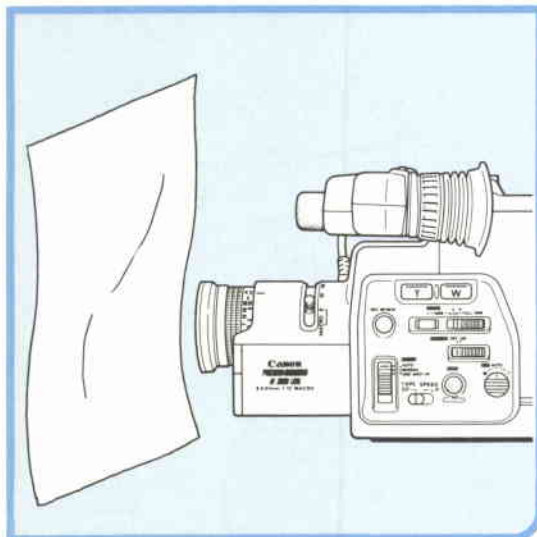


AUTO ADJUSTMENT

When full-auto adjustment cannot be used due to the subject or lighting conditions, use auto adjustment.

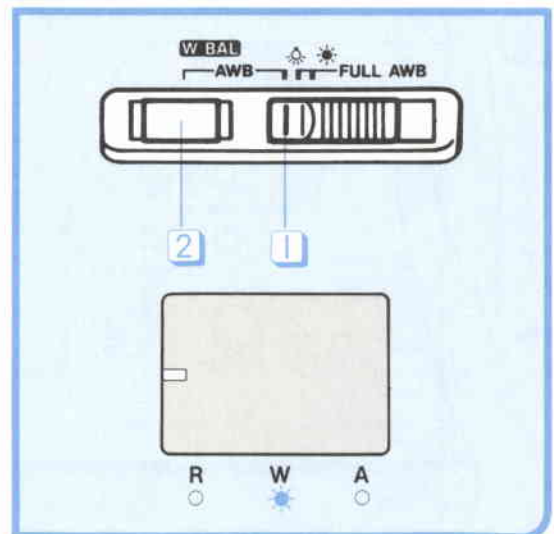
1

Point the camera at a white object, so that it completely fills the viewfinder.



2

- 1 Set the white balance selector to AWB.
- 2 Press and hold the AWB button.



• The zooming lever should be set to T (telephoto).

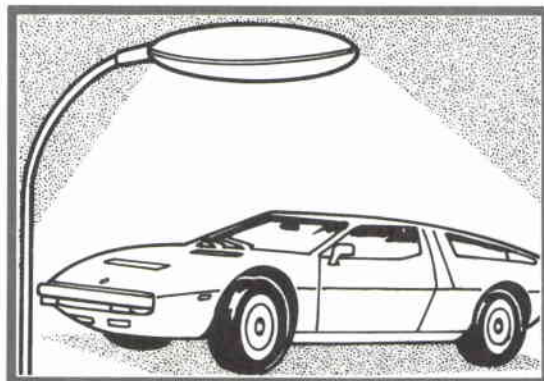
TIMES WHEN FULL AWB IS NOT RECOMMENDED

Full-auto white balance adjustment may not work well in the following instances:

When shooting subjects made up of only one colour.



When recording under strong reddish coloured lighting (sunrise, sunset, candlelight or sodium light, for example).



WHITE BALANCE SELECTOR SETTING AND INDICATOR

Selector setting	Status	Indicator
FULL AWB	White balance adjusted automatically	Does not appear
AWB	Before adjustment	Lights continuously
	During adjustment	Flashes
	After adjustment	Turns off

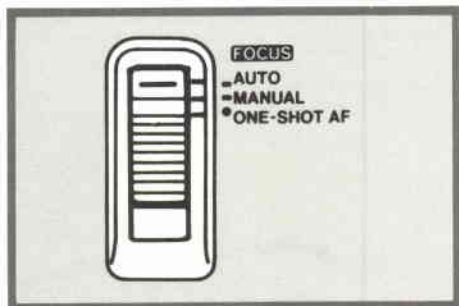
Notes:

- Readjust white balance whenever the light source changes.
- If the white balance indicator remains lit, even after pressing the AWB button, lighting may not be adequate. Use additional lighting and try to set white balance once again.
- If shooting a shaded subject on a clear sunny day, the colour temperature may be too high for white balance adjustment (see P. 43). In this case, shoot though the indicator continues to light.
- Though FULL AWB reproduces colours accurately under most circumstances, auto adjustment is recommended for optimum colour reproduction even under normal lighting conditions.

FOCUSING

The VM-E2 utilizes three different focusing methods: Autofocus, Manual Focus and One-shot Autofocus. Normally, use autofocus for the best results.

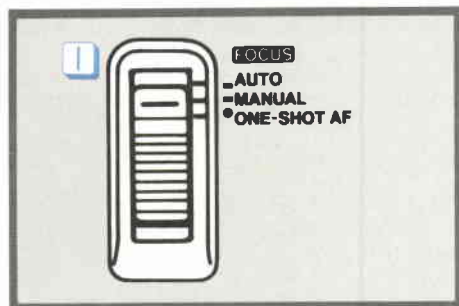
AUTOFOCUS



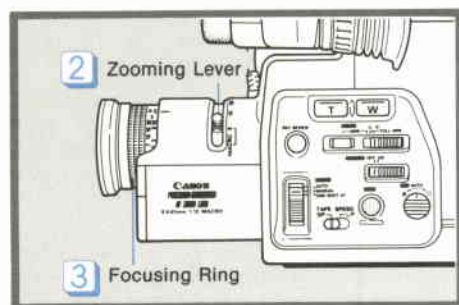
Set the focus selector to AUTO.

- Subjects centred in the viewfinder will be focused automatically.
- Do not use the focusing ring during autofocus.

MANUAL FOCUS



1 Set the focus selector to MANUAL.

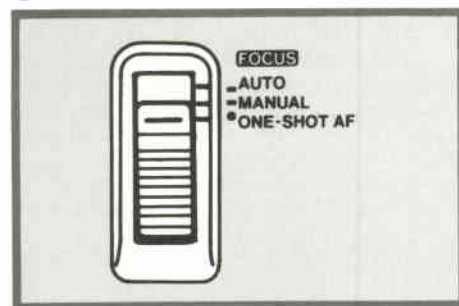


2 Set the zooming lever to T (telephoto).

3 Focus the subject with the focusing ring while looking through the viewfinder.

- Use the zooming lever to frame the picture as desired.

ONE-SHOT AUTOFOCUS



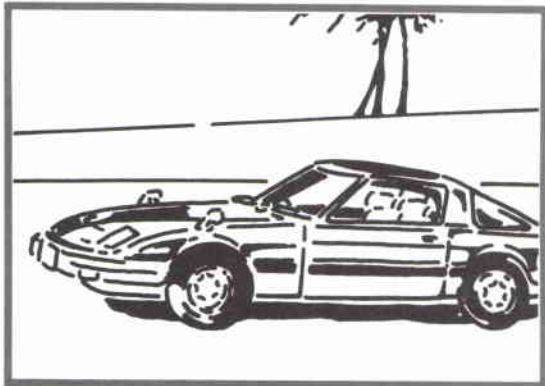
When you want to use autofocus momentarily during manual focusing, slide the focus selector to ONE-SHOT AF.

- The autofocus mechanism operates as long as you hold the focus selector in the ONE-SHOT AF position.
- Manual focusing resumes when the selector is released.

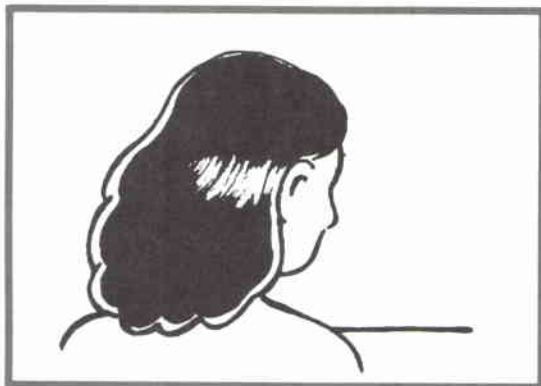
SUBJECTS NOT SUITABLE FOR THE AUTOFOCUS MECHANISM

Autofocus may not work well in the following instances, and manual focus is recommended for best results.

Subjects with very glossy or shiny surfaces (e.g. the exterior of a car).



Subjects with little or no reflection (e.g. black clothes, black hair, water surface).



Scenes which cause a strong contrast between the right and left halves of the screen.

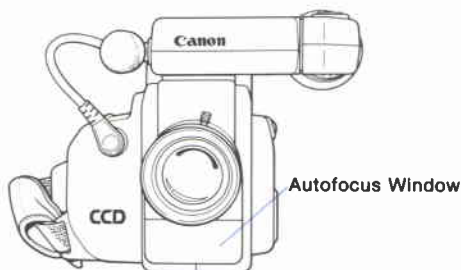


Subjects with an object in front of them (e.g. an animal in a cage).



Notes:

- Be sure not to cover the autofocus window with your hand, fingers, etc. during recording.



- Point the camera so that your subject is in the middle of the viewfinder.

- This mechanism will focus subjects located up to 10m away from the camera. If the subject is located farther, the focus will be locked at infinity. When shooting bright subjects outdoors during the daytime, the lens aperture is small so that accurate focus is maintained easily. If it is cloudy or if you are shooting under the shadow of trees, etc. or if shooting dark subjects (night scenes, etc.), use manual focusing.

ZOOMING

The VM-E2 has two zooming methods: power zooming and manual zooming. Normally, use power zooming.

POWER ZOOMING



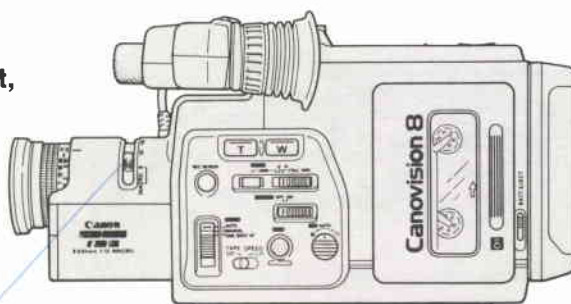
To zoom out from the subject, press W.



To zoom in on the subject, press T.

MANUAL ZOOMING

Simply rotate the zooming ring using the zooming lever.



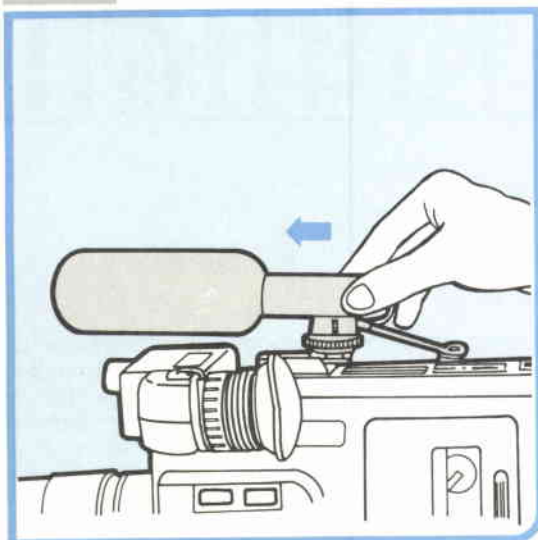
Zooming Lever

EXTERNAL MICROPHONE

You can effectively record distant or specific sounds by using the optional DM-200 Super-directional Microphone.

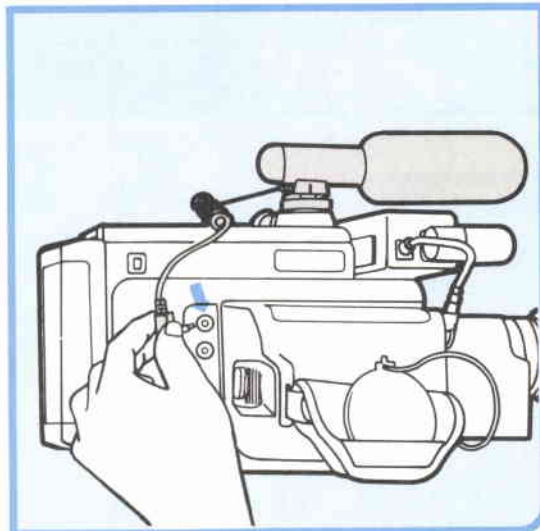
1

Slide the microphone into the accessory shoe.



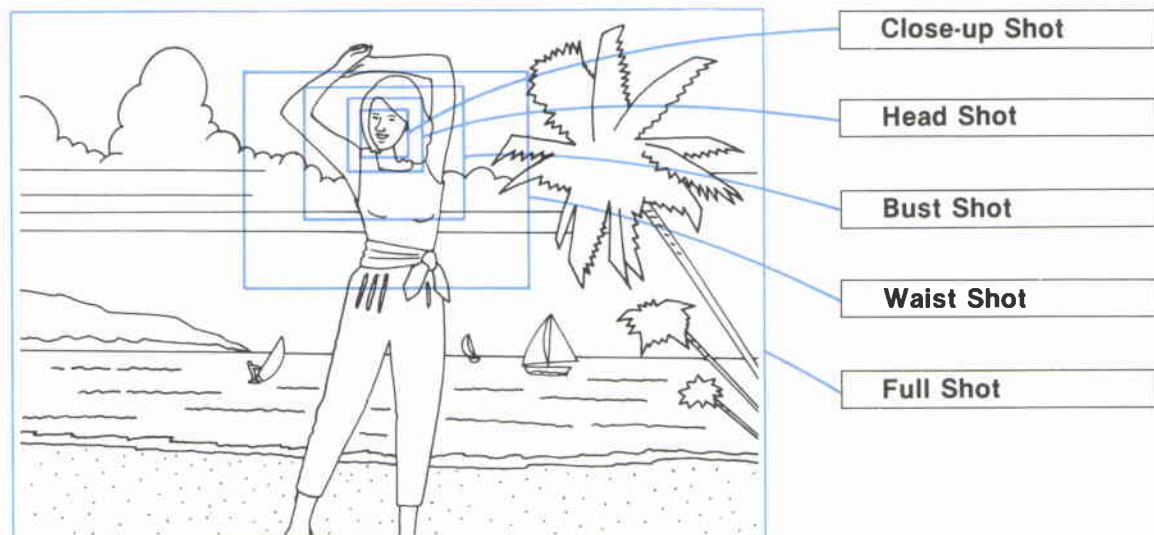
2

Connect the microphone cord to the external microphone jack.



ZOOMING AND SUBJECT IMAGE SIZE

You can give variety to your recordings by using different shots like the following:



Notes:

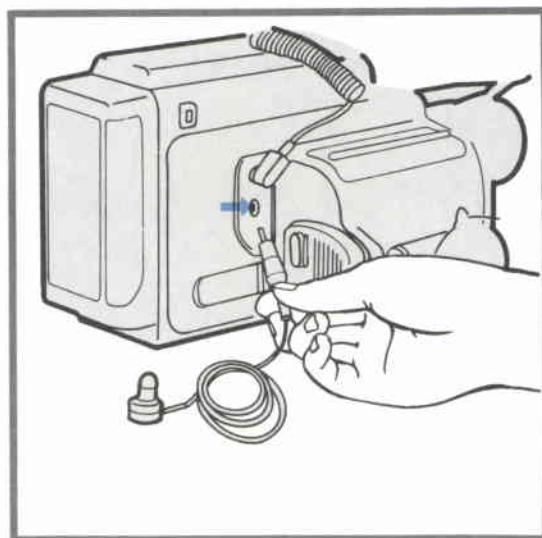
- The built-in microphone does not operate when an external microphone is connected.
- The recording level cannot be adjusted.

Advice

- When recording at quiet locations, use the optional MB-100 Microphone Boom to raise the microphone out of range of unwanted camera noise.

SOUND MONITORING

You can monitor the sound during recording and playback by connecting a commercially available earphone to the earphone jack.



- Use an earphone with an impedance range of 16 ohms or less and a 3.5mm mini-jack.

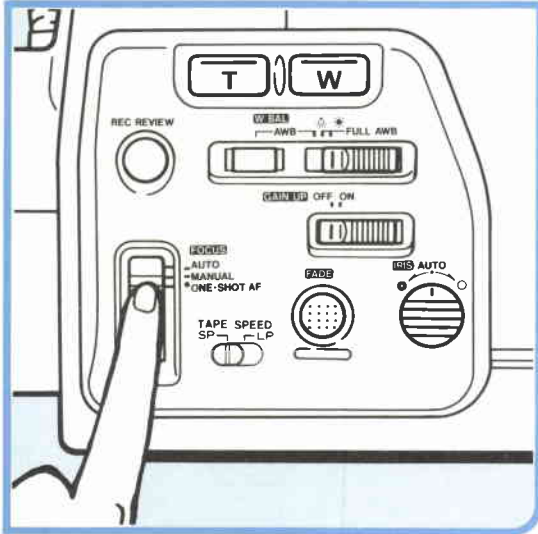
SPECIAL OPERATIONS

MACRO MECHANISM

Use the macro mechanism when you want to record objects from an extremely close distance.

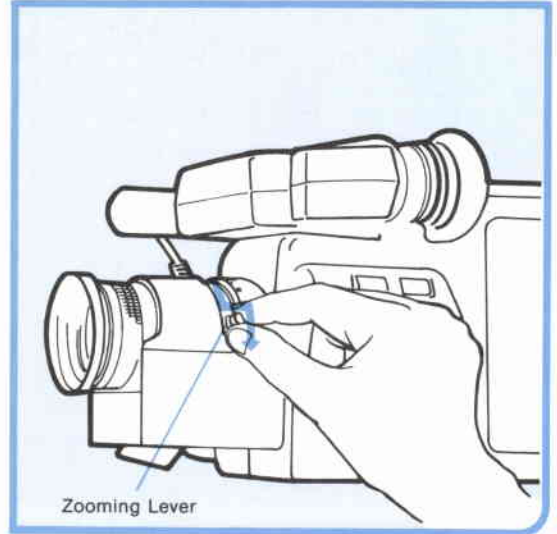
1

Set the focus selector to **MANUAL**.



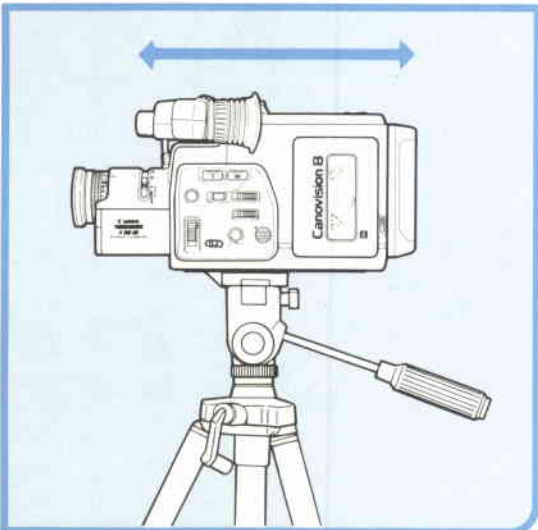
2

Rotate the zooming lever to the wide-angle position. Then, pull the lever out and rotate it into the macro range.



5

To change the subject image size, move the camera forward or backward slightly and fine focus again.

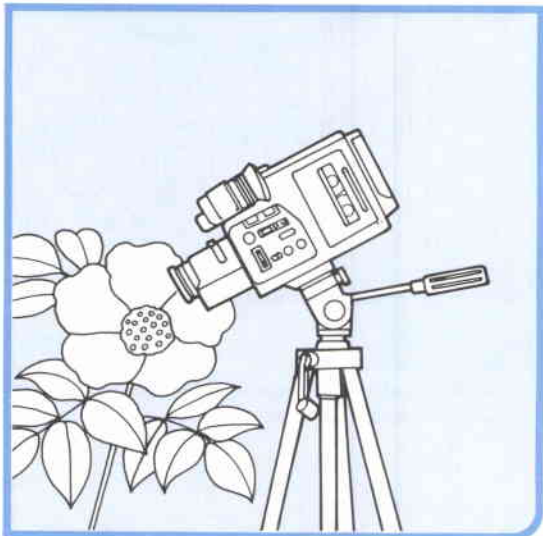


Note:

- Be sure to provide adequate lighting.

3

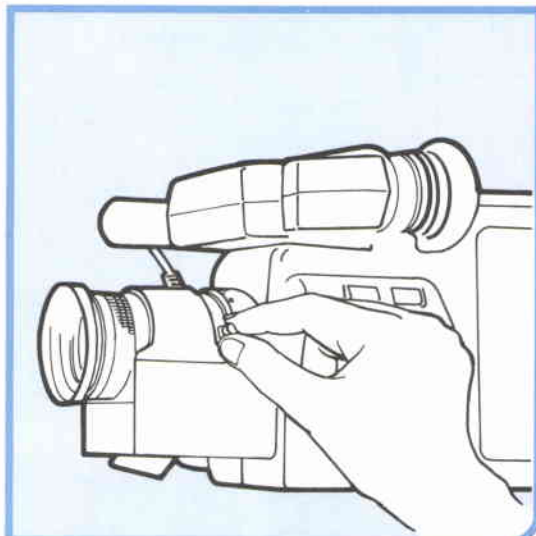
Approach the subject until you can focus it as you look through the viewfinder.



- Use a tripod for better recording stability.

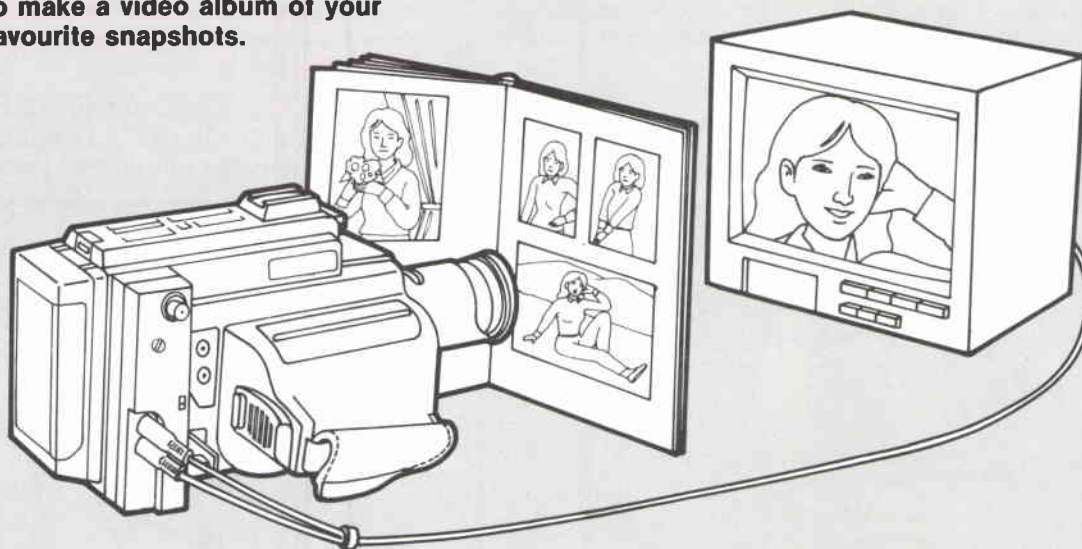
4

For fine focusing turn the zooming lever.



- Focusing should be performed within the macro range.

Use the unique macro mechanism to make a video album of your favourite snapshots.

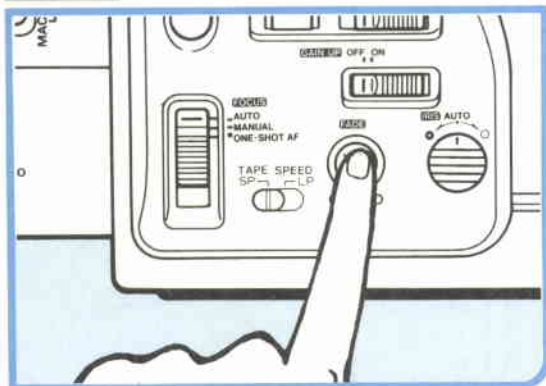


AUTO FADE

Gradually fade in from a black screen.

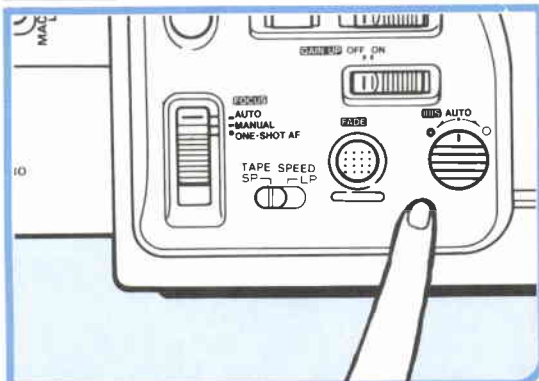
1

Place the VM-E2 in the record pause mode, then press and hold the fade button.

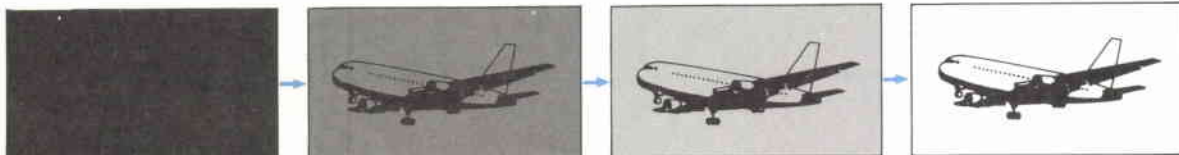


2

Press the start button, wait for about three seconds and then release the fade button.



• The total fade in will occur in about three seconds.



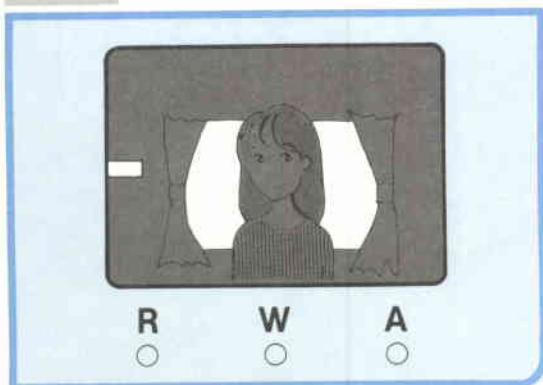
• Sound fades in along with the image.

EXPOSURE ADJUSTMENT

Before shooting a backlit subject (one with the sun or an open window behind it), or a frontlit subject (one that is brighter than the surrounding area), exposure should be adjusted.

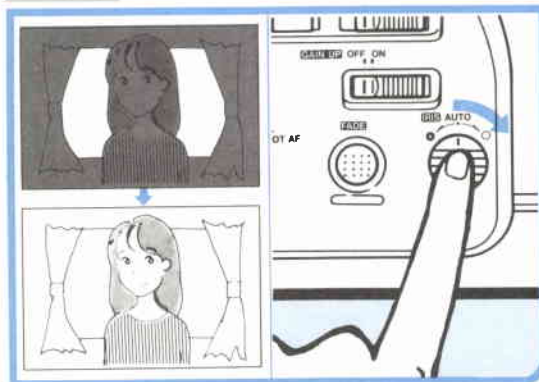
1

Compose the image.



2

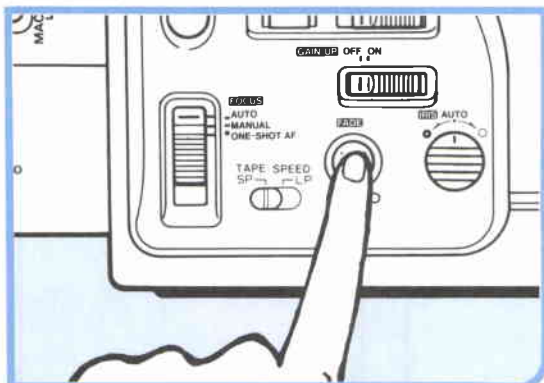
For a backlit subject, turn the iris control dial in the \odot direction to increase the amount of light.



Gradually fade out to a black screen.

1

Press the fade button during recording.



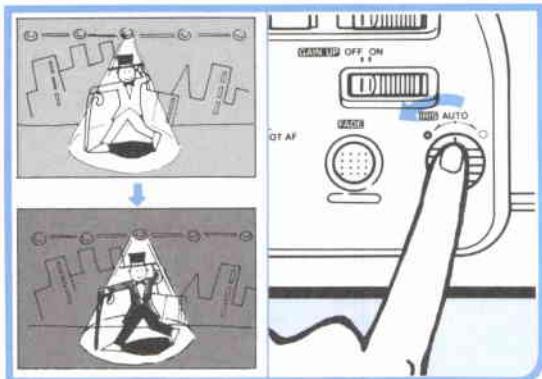
- The total fade out will occur in about three seconds.



- Sound fades out along with the image.

3

For a frontlit subject, turn the iris control dial towards ● to reduce the amount of light.



Notes:

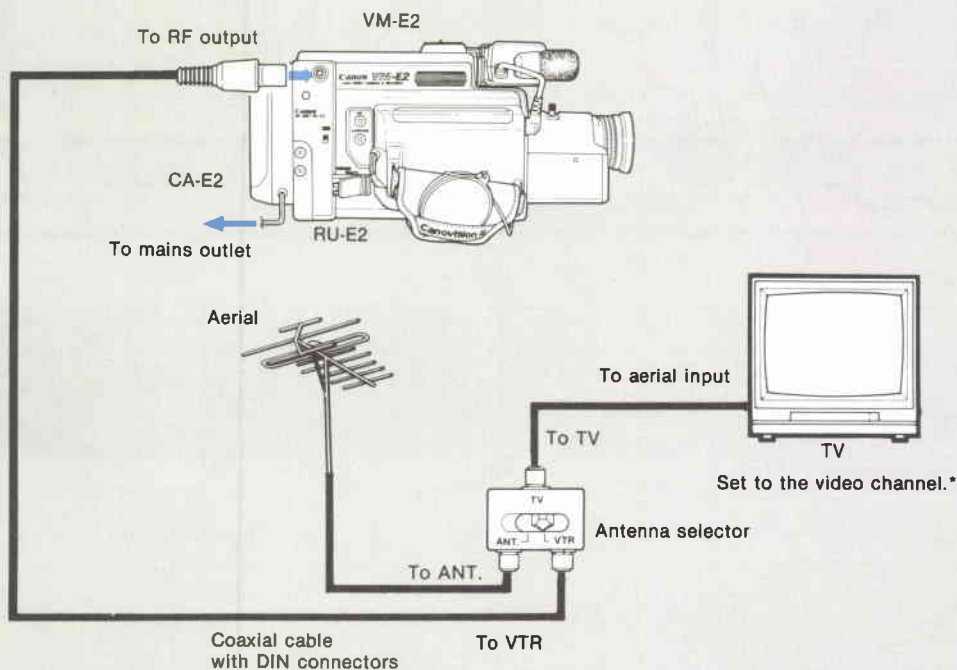
- Don't change the frame of the scene after adjusting the iris control.
- Be sure to set the iris control dial back to AUTO when recording is complete to assure correct exposure for the next scene.

CONNECTION PROCEDURE

To play back recorded tapes on your TV, use the CA-E2 Compact Power Adapter and the RU-E2 RF Unit.

USING A TV WITHOUT AUDIO/VIDEO INPUTS

Connect the CA-E2 and RU-E2 to the VM-E2. See RU-E2's instruction manual for further details concerning connections.



*The video channel is the channel in your area not being used by any broadcasting station, which may be used for playback (32-40 selectable).

RU-E2 SETTING

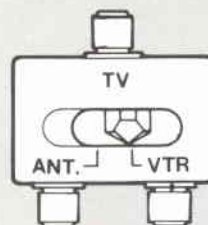
Set to the video channel *

RF/line out selector:
RF OUT

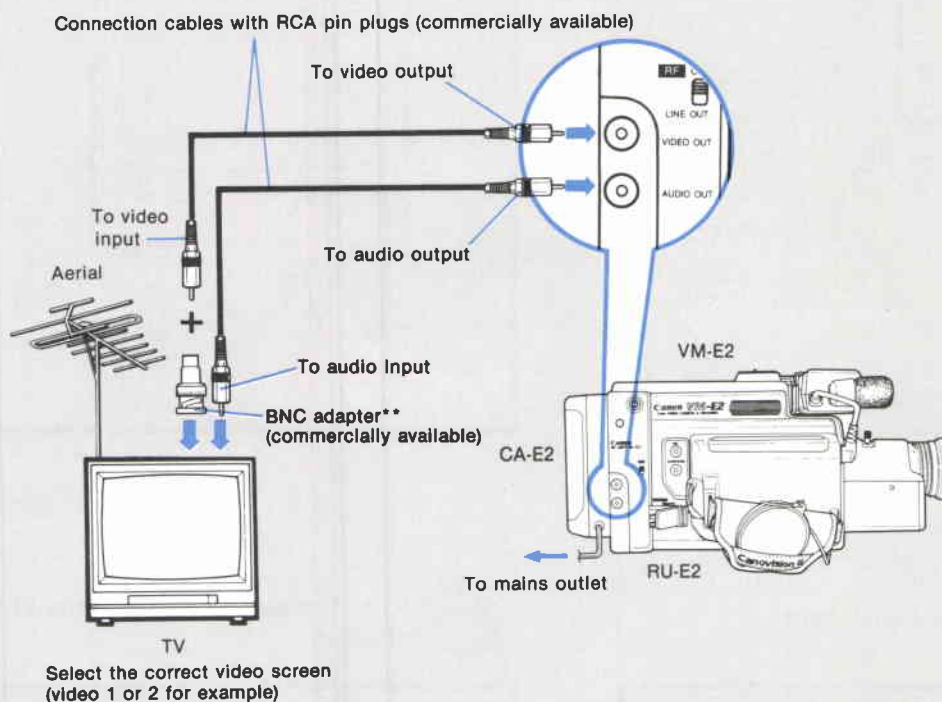


ANTENNA SELECTOR SETTING

Antenna selector: VTR

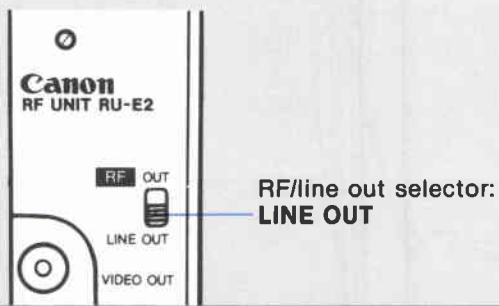


USING A TV WITH AUDIO/VIDEO INPUTS



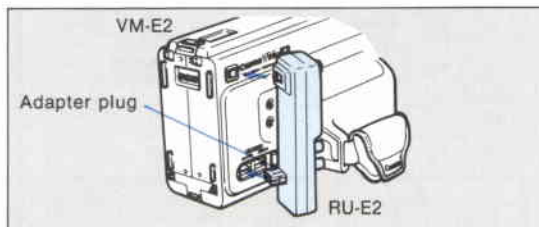
**For a TV which has a BNC-type video Input, use a commercially available BNC plug adapter for connection.

RU-E2 SETTING



Notes:

- When attaching the RU-E2, plug the RU-E2 firmly into the VM-E2's adapter terminal and socket.

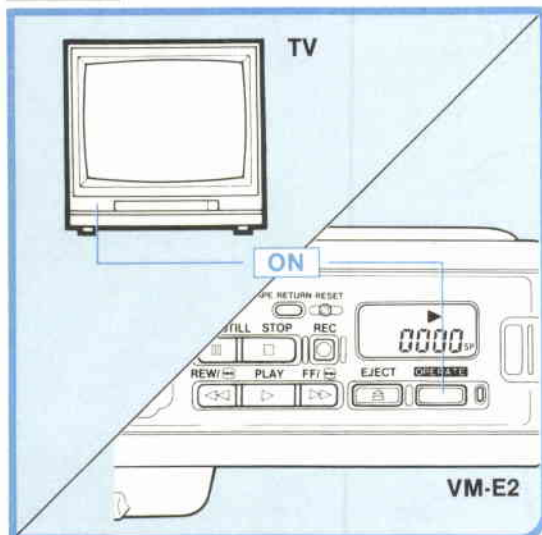


- When removing the RU-E2, hold the lower part of the RU-E2 and remove the adapter plug first.

PLAYBACK PROCEDURE

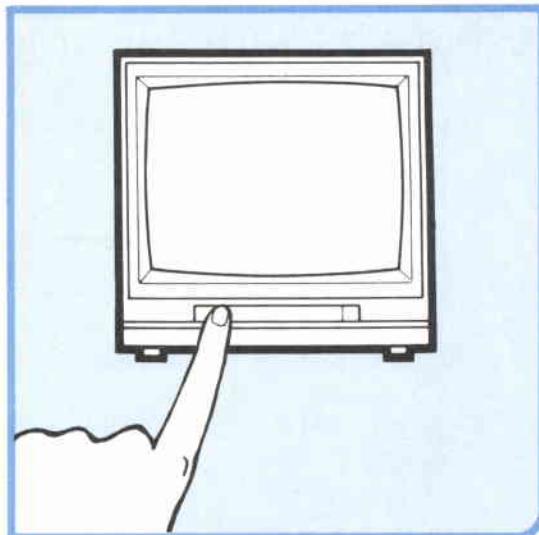
1

Turn the VM-E2 and TV on.



2

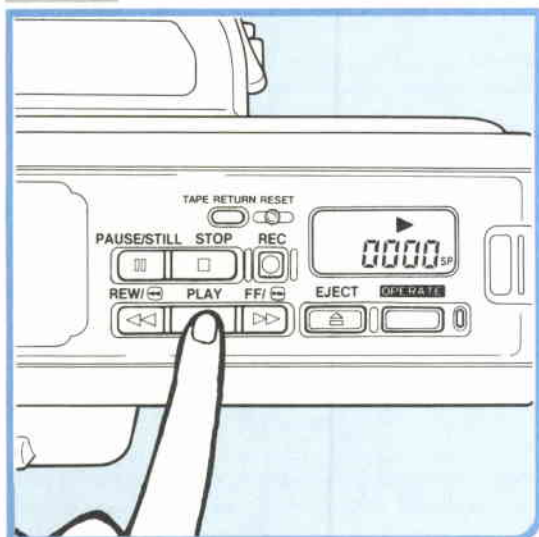
Set TV to video channel* or appropriate video screen.



*See P. 35

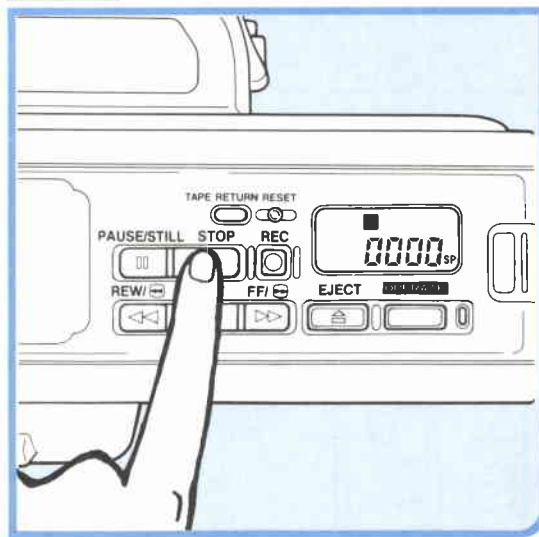
5

Press the play button.



6

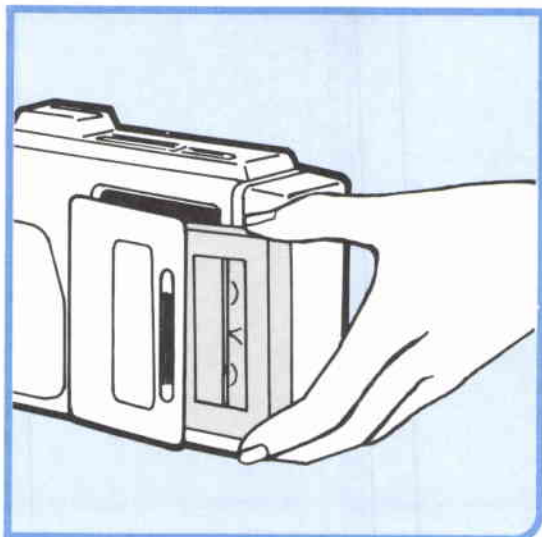
To stop playback, press the stop button.



• When the end of the tape is reached, the tape rewinds automatically.

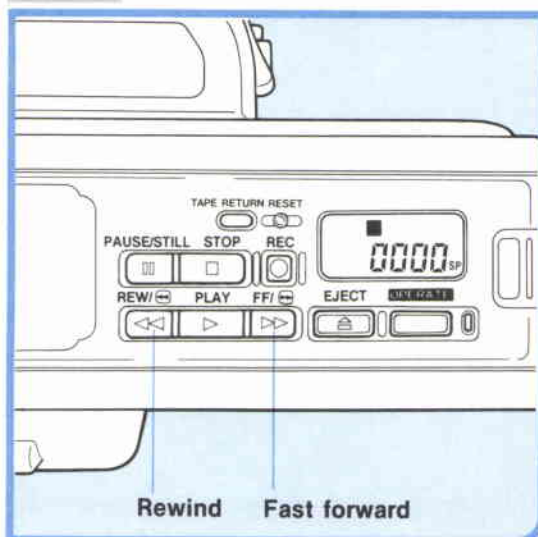
3

Load the video cassette.



4

Locate the desired starting point with the fast forward/search or rewind/review button.

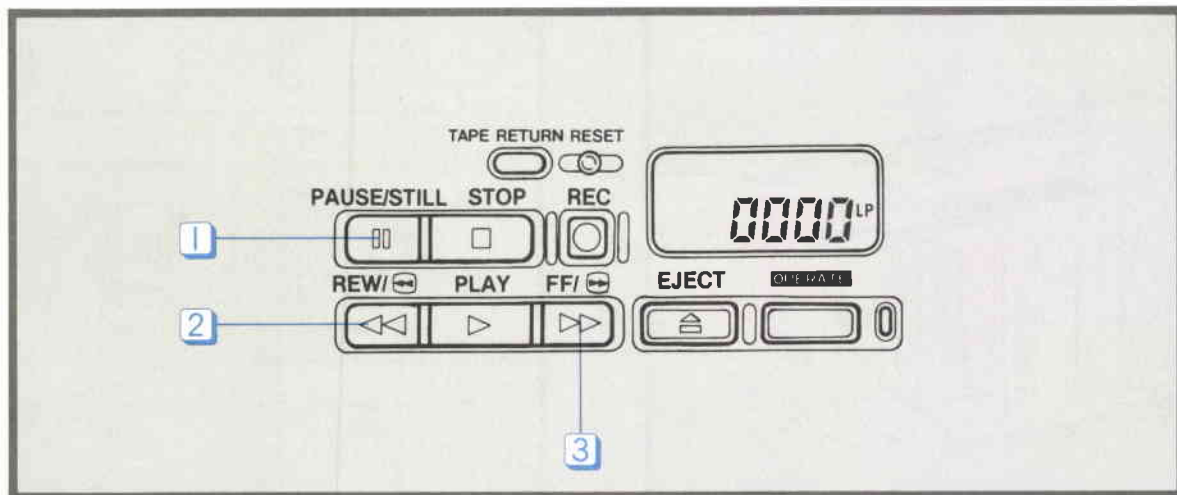


Notes:

- Tape speed is selected automatically.
- Any time the recording mode is changed on a tape (SP to LP or vice versa) the playback picture will contain noise at that point.
- The illustrations of the RU-E2 RF unit in this manual are for European models only. The RU-E2 RF unit for Australia will differ slightly.

SPECIAL PLAYBACK

Besides normal playback, the VM-E2 incorporates the following special playback functions.



1 Still Playback (still picture)



To bring the picture to a complete stop during playback, press the pause/still button. Press it once again to resume normal playback.

2 Rewind Playback



Press and hold the rewind/review button during playback to view the scene in reverse at 5-times the normal speed.

3 Fast Forward Playback



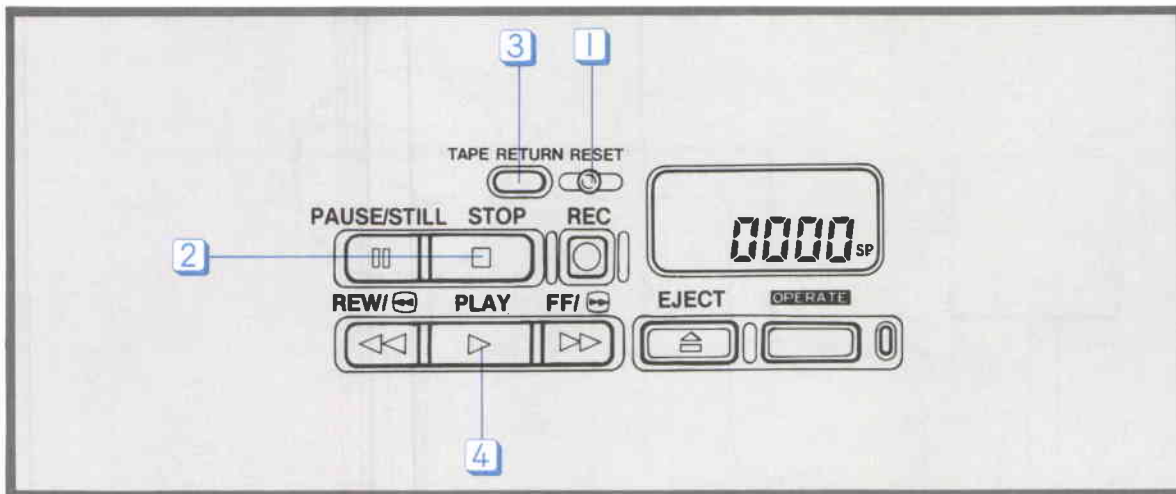
Press and hold the fast forward/search button during playback to view the scene at 5-times the normal speed.

Notes:

- If still playback continues for more than approx. 7 minutes, the VM-E2 stops automatically to reduce head and tape wear. (If using a battery pack, the VM-E2 shuts off automatically after 7 minutes in the still playback mode.)
- During special playback, the VM-E2 cannot distinguish between mode changes. If you are having difficulty viewing, release the special playback mode and make sure the normal playback picture appears clearly. Then try special playback again.
- Notes about special playback of tapes recorded in SP.
 - (1) The still playback picture will contain much more noise than for a tape recorded in LP.
 - (2) During fast forward or rewind playback, noise bars will be much wider than for a tape recorded in LP.
 - (3) Certain TVs may show the special playback picture in black-and-white, or the picture may roll or divide.

TAPE RETURN

You can quickly find the spot on the tape you want to see using tape return.



- 1 When a scene appears that you will want to watch again later, press the counter reset button.

- The counter will reset to 0000.



AFTER PLAYBACK

- 2 Press the stop button



- 3 ...then press the tape return button.

- The tape rewinds and stops automatically when the counter reading approaches 0000.



- 4 Press the play button.

- Playback will start from the approximate point where you pressed the reset button (around 0000).



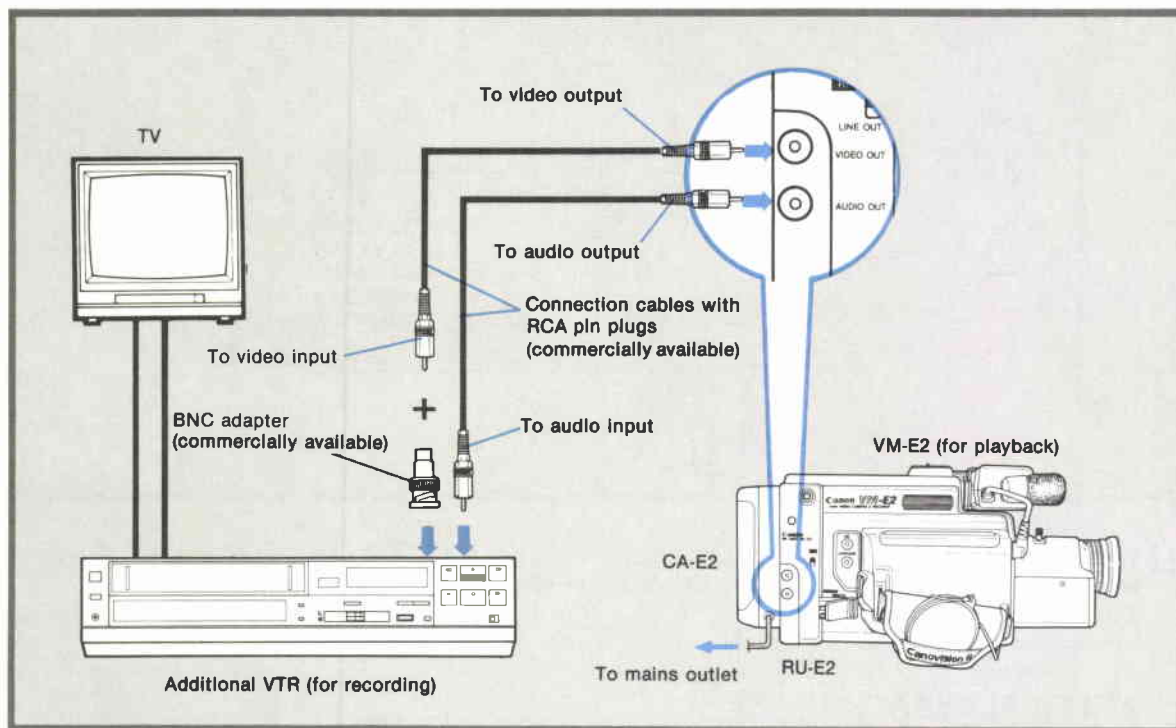
Notes:

- The tape counter reading is not absolutely precise. Use it as a guide.
- Tape return does not operate when the counter reading is between -0002 and 0002.

CONNECTION PROCEDURE

USING THE VM-E2 AS THE PLAYBACK UNIT:

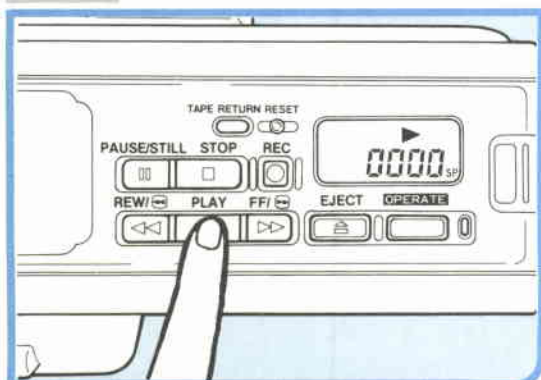
The CA-E2 Compact Power Adapter, RU-E2 RF Unit and an additional VTR are necessary for editing.



EDITING PROCEDURE

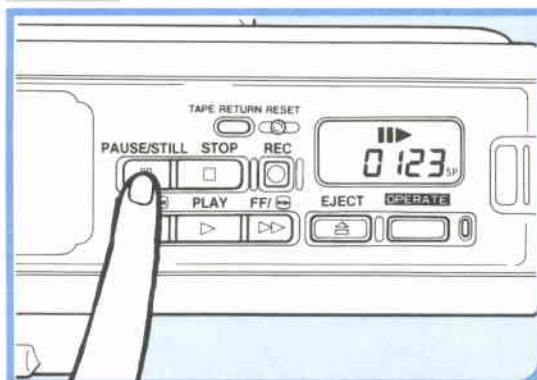
1

Locate the edit start point.



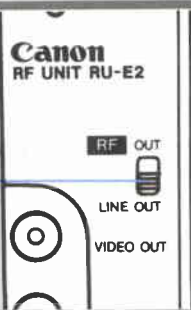
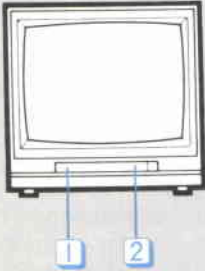
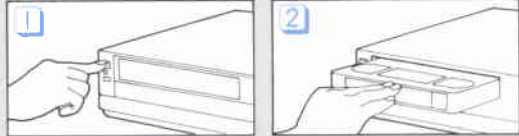
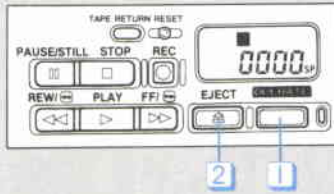
2

At the point where you want to start editing, press the VM-E2 pause/still button.



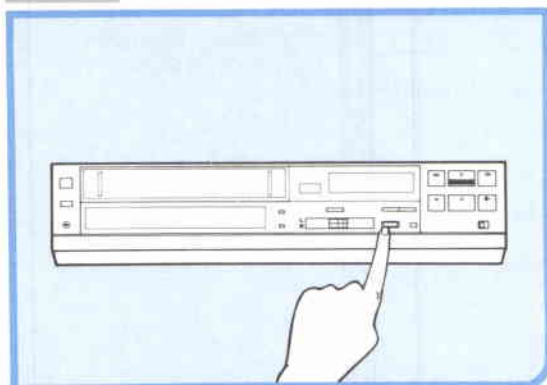
- Check the playback picture on the TV screen.

PREPARATIONS

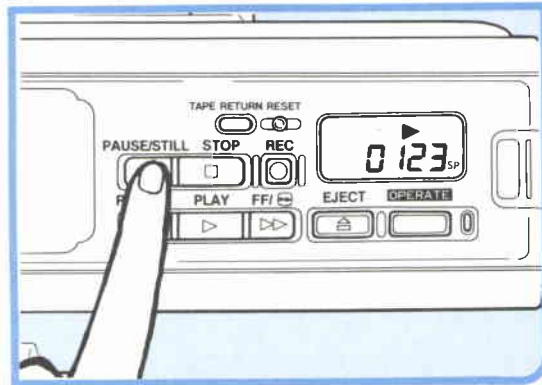
<p>RU-E2</p> <p>RF/line out selector: LINE OUT</p> 	<p>TV</p> <ol style="list-style-type: none"> 1 Turn power on. 2 Set to the video channel* or correct video screen. 
<p>Recording VTR</p> <ol style="list-style-type: none"> 1 Turn power on. Set input selector to LINE 2 Load a video cassette. 	<p>VM-E2</p> <ol style="list-style-type: none"> 1 Turn power on. 2 Load the video cassette. 

*See P.35

3 Press the recording VTR's record button.



4 Press the VM-E2 pause/still button to start editing.



- Press stop buttons on both the VM-E2 and the recording VTR to stop editing.
- Both image and sound quality of the edited tape will be somewhat less than that of the original.

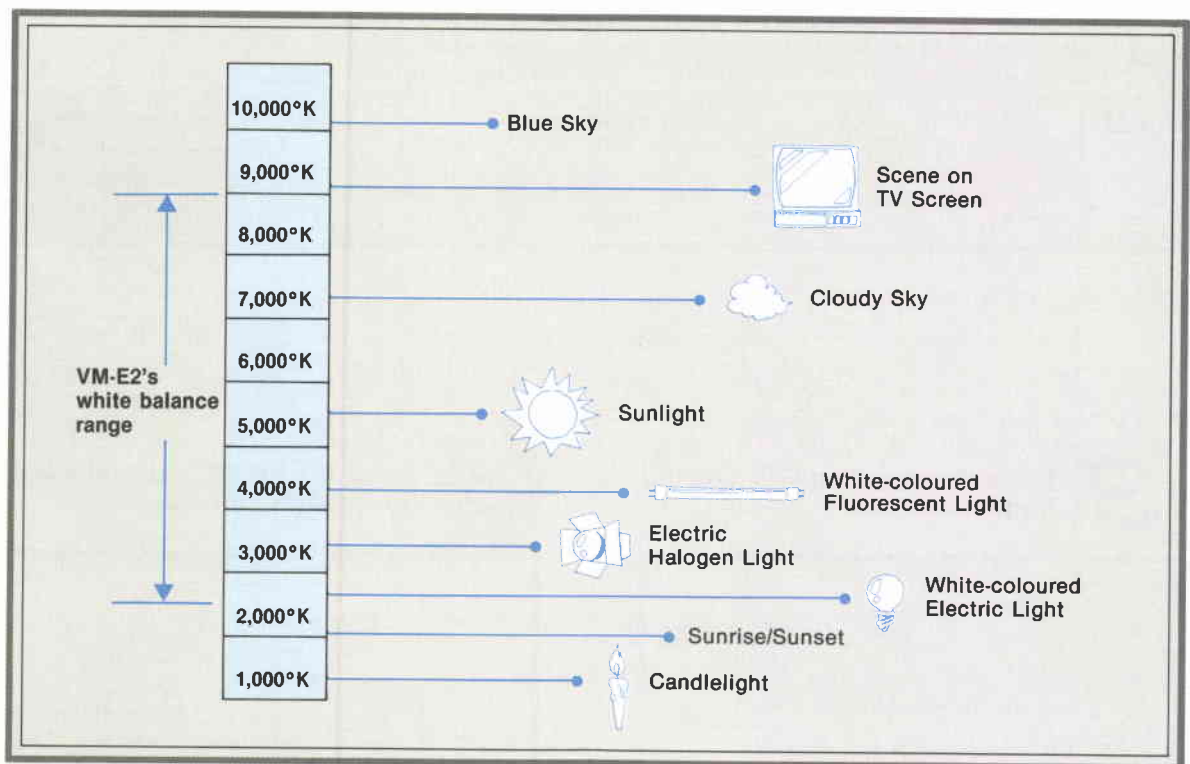
COLOUR TEMPERATURE

WHAT IS COLOUR TEMPERATURE

The colour cast by each type of lighting differs depending on the light source, such as red from candlelight and white from fluorescent. The difference in colour is expressed as colour temperature in terms of unit "K" (Kelvin). As colour of lighting changes, red → yellow → white → blue, the colour temperature rises.

White paper, under candlelight or fluorescent light, will look white to the human eye because the eye adapts quickly to differences in lighting. A camera, however, cannot make this distinction, so white paper under candlelight for example, will look reddish.

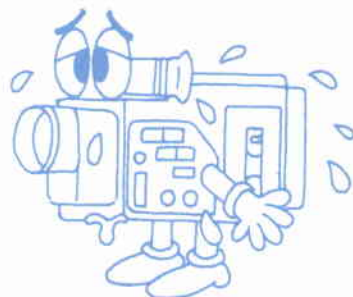
To balance the colour of the recording and make objects appear as natural as possible under the lighting you are about to shoot under, white balance adjustment is necessary. If a recording is made without white balance adjustment, the colour of the recorded subject will look unnatural.



CONDENSATION (DEW)

WHAT IS CONDENSATION

When bringing a metal object from a cold place into a warm place, tiny droplets of water can form on its surface. This moisture is referred to as condensation or dew. If the camera is used when dew is present, both tape and unit may be damaged.

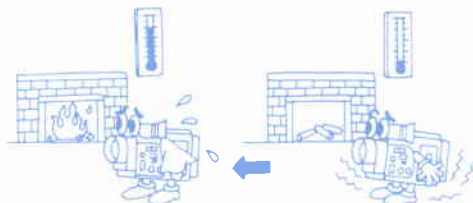


CONDENSATION IS LIKELY TO OCCUR:

- When the VM-E2 is brought in from a cold place to a warm place.



- When a cold room is rapidly heated.



- When the VM-E2 is placed in a humid room.



- When the VM-E2 is brought from an air-conditioned room to a warm and humid place.



WHEN CONDENSATION HAS OCCURRED:

- 1 The “d” mark will start blinking on the information display, and the VM-E2 will automatically stop.

Information Display



Dew Mark

- 2 Immediately remove the video cassette and turn VM-E2 off.

- In this condition, only the operate button and the cassette eject button are operative.

TO USE THE CAMERA AGAIN

When the “d” mark no longer appears when turning the VM-E2 on, the unit can be operated. The time required for moisture to clear varies with surrounding conditions; it can be as long as several hours.

Advice

When condensation is likely to occur, place the camera in a plastic bag prior to bringing it into a warm area, and wait until it equals the ambient temperature before taking it out.

RECORDING ADVICE

The following basic precautions and techniques are intended to help you in making your own video movies. For more advanced recording techniques, refer to specialized magazines, etc.

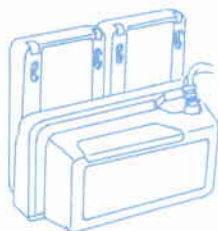
PREPARATION

For the best possible recordings, be sure to prepare everything properly before you start.

Prepare the Equipment

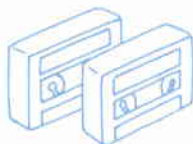
1. Battery Charge

Charging a battery takes time. Make sure all batteries are adequately charged before you start recording. The safest policy is to have enough batteries to cover 1.5 to 2 times the length of recording time scheduled.



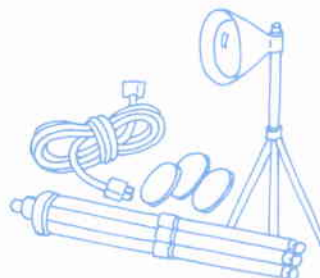
2. Video Cassette

Recording almost always takes up more time and more tape than you expect. It is always best to have plenty of video cassettes on hand.



3. Accessories

Be sure to inspect all accessories, such as tripods, cords, and lights, making sure they are in proper working order.



SUGGESTIONS FOR GOOD RECORDING

Make a Test Recording

Especially when recording very important scenes, such as weddings, make a test recording beforehand, under the expected conditions. This will enable you to check the results and to familiarize yourself with the equipment.

Use Autofocus Liberally

Use autofocus for regular recording. Subjects centred in the viewfinder are focused automatically allowing more creative recording possibilities.

Strive for Stable Images

When you must hold the camera in hand and move about, try to maintain your body in a stable position and hold the camera securely. If there are trees or walls nearby, make full use of them to steady your position. Hand held camera recording works best when the lens is set for wide angle. Use a tripod as often as possible, especially when the lens is in the telephoto or macro range.



Move the Camera Slowly

When moving the camera horizontally (panning) or vertically (tilting) during recording, proceed slowly so that the subject can be fully covered. It is safer to set the lens for wide angle when you have to move the camera like this so that camera motion won't be as noticeable.

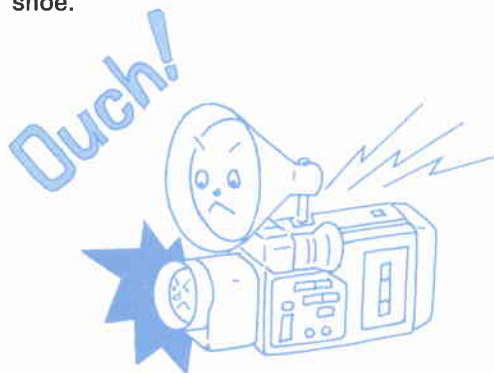


Use an AC Power Source for Indoor Recording

Use an AC power source for shooting indoors if the camera will not be moved around much, since you won't have to worry about battery charge.



Do not attach a video light weighing more than approximately 600g to the accessory shoe.



Remember: Safety First When Shooting

Injuries incurred while recording can be very serious. Avoid dangerous shooting locations, and always take adequate safety precautions.

Precautions for Using a Video Light

Remember that the video light emits intense heat. Do not touch it with your bare hand, and avoid pointing the camera directly at the light.



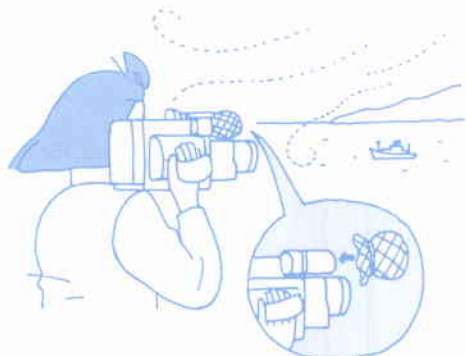
SUGGESTIONS FOR SOUND RECORDING

Effective Use of the Microphone

When you want to record surrounding sounds such as at athletic competitions or festivals, the microphone built into the camera is adequate, but if there is excessive noise and a specific sound cannot be recorded clearly, use an optional directional microphone.



When recording in strong winds, the whirling sound of the wind can prevent good sound recording. At such times cover the microphone with a handkerchief. While recording, listen through an earphone to make sure the microphone has been covered effectively.



PROTECTION AND STORAGE

Lens Protection

It is advisable to use an UV filter to protect the lens against dust and fingerprints.

Take Good Care of Equipment

Recording can demand moving around quite a bit. Equipment can become damaged by vibrations, shocks or falls during transport. Take good care of all equipment to insure quality recordings and long life for your video system.



Before storing your equipment, be sure to clean it of dirt, dust, moisture and salt deposits.



CAUTIONS

Do Not Disassemble the Unit.

It is very dangerous to disassemble the unit or touch any of its internal parts. If the unit does not function properly, take it to qualified service personnel.



Do Not Expose the Unit to Rain or Water.

Do not use the unit in the rain or let the unit come in contact with water. If, somehow, water does get into the unit, contact qualified service personnel as soon as possible.



Do Not Expose the Unit to Excessive Heat.

When using lighting equipment, be sure not to expose the unit to too much heat radiating from such equipment.



Using the Battery Pack.

Carefully read the instructions of the battery pack before use.



Do Not Expose the Unit to Shock or Vibrations.

Be sure to handle the unit gently. Vibration or shock can cause damage.



Always Replace the Lens Cap.

Always replace the lens cap after use to prevent sand and dust from getting on the lens. Be especially careful to affix the cap on windy days.



Avoid Pointing the Lens into Direct Sunlight or Other Strong Light Sources.

Do not aim the lens directly at the sun or other strong light, or leave the lens aimed at a subject with great brightness since this can cause damage.



Avoid High Temperatures and High Humidity.

Do not expose the unit to high temperature or high humidity, such as inside a car during hot weather, when all the doors and windows are shut. Such exposure can cause damage.



Avoid Sudden Changes in Temperature.

If the unit is suddenly brought into a warm place from a cold place, condensation can form on the internal parts and lens, so take appropriate care when moving the unit.



Clean the Unit with a Soft, Dry Cloth.

The unit should be cleaned using a soft, dry cloth. Do not use chemically treated cloth or volatile solvent such as paint thinner, since this can damage the unit.



Store the Unit Properly.

If you do not intend to use the unit for some time, store it in an area free of moisture and dust, and where the ambient temperature is no higher than 30°C.



Check the Operation of Each Component.

If the unit has not been used for a long time, be sure to check that each component functions correctly before use.



Avoid Exposure to Strong Electromagnetic Waves.

Do not use the unit close to sources of magnetic or electric fields (power plant, TV tower, TV set, magnets, motors, audio equipment etc.).



Keep the Heads Clean.

The video heads should be cleaned only when necessary using a commercially available cleaning cassette.



Store Cassette Tape Properly.

Do not place video cassettes in areas exposed to direct sunlight, near heat-radiating sources such as stoves, or close to magnetic bodies such as speakers, since these can cause tape deformation and damage to valuable recordings.



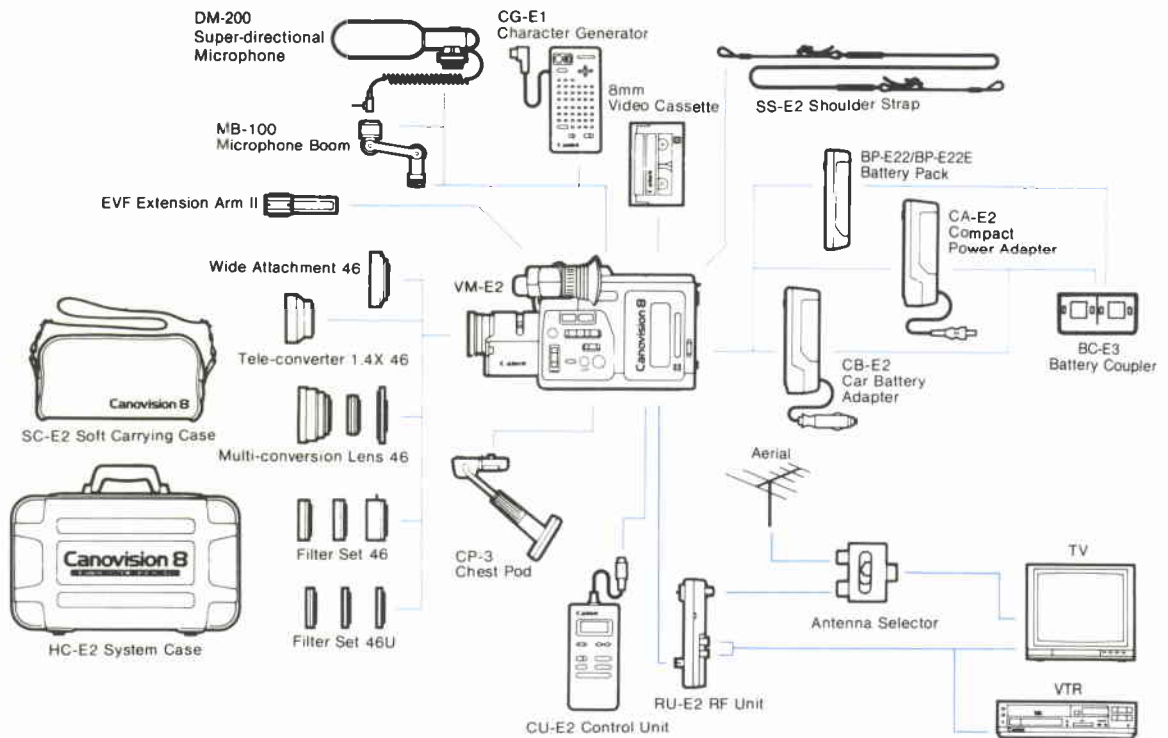
BEFORE REQUESTING SERVICE

If you think the unit may be broken, first remove and then reattach the power source. If the problem persists, go through the following list before requesting service.

Symptom	Cause	Remedy
■ VM-E2 does not turn on.	▶ Battery pack charge level is low.	★ Replace with fully charged battery pack.
■ VM-E2 turns off during operation (when battery is in use).	▶ Battery pack charge level is low.	★ Replace with fully charged battery pack.
	▶ Stop mode has lasted for 5 minutes or longer.	★ Turn VM-E2 on again.
	▶ Record pause mode has lasted for 7 minutes or longer.	★ Turn VM-E2 on again.
■ Cassette compartment does not open.	▶ VM-E2 is off.	★ Turn VM-E2 on.
	▶ Battery pack charge level is low.	★ Replace with fully charged battery pack.
■ Does not function when an operation button is pressed.	▶ VM-E2 is off.	★ Turn VM-E2 on.
	▶ Battery pack charge level is low.	★ Replace with fully charged battery pack.
	▶ No cassette is loaded.	★ Load video cassette.
■ "BATT" is blinking on the information display.	▶ Battery is about to wear out completely.	★ Replace with fully charged battery pack.
■ "d" is blinking on the information display.	▶ Dew is formed inside the unit.	★ Refer to "CONDENSATION (DEW)" on page 44.
■ "E" is blinking on the information display.	▶ Safety device is operating.	★ Unload the video cassette and confirm that there is no problem with the tape (tape tension, for example), then reload the videocassette and try to resume operation.

Symptom	Cause	Remedy
■ Pressed start button, but tape does not.	▶ Refer to "Does not function when an operation button is pressed" in this table.	
	▶ Tape ended (END appears on the information display).	★ Rewind the tape or use another cassette.
	▶ Tape with erasure prevention switch in the non-recordable position is loaded.	★ Either replace the cassette or move the switch to the recordable position.
■ Pressed play button, but playback does not start.	▶ Refer to "Does not function when an operation button is pressed" in this table.	
■ Tape is moving, but no picture appears on the TV screen.	▶ Video channel (screen) is not properly set on the TV or RU-E2 RF Unit.	★ Set the TV and RU-E2 RF Unit to the appropriate video channel or screen. See P. 35.
■ Playback picture contains noise.	▶ Video head is dirty.	★ Clean the video head using a commercially available cleaning cassette.
■ Cannot focus.	▶ Zooming lever is in the macro range.	★ Move the zooming lever into the normal focusing range.
	▶ Viewfinder diopter is not properly adjusted.	★ Turn the diopter adjustment ring until the image in the viewfinder becomes clear.

CANON 8mm VIDEO SYSTEM



SPECIFICATIONS

Power supply (rated):	6V DC
Power consumption:	Less than 7.5W (recording mode)
Television system:	CCIR standard (625 lines, 50 fields); PAL colour signal
Video recording system:	2 rotary heads, helical scanning system; Luminance: FM azimuth recording; Colour signal: Converted subcarrier phase shift recording (8mm video standard)
Audio recording system:	Frequency multiplexing with the video signal by two rotary heads (one channel)
Image sensor:	1/2-inch CCD (Charge Coupled Device)
Tape format:	8mm, 30/60/90 minute metal particle*
Tape speed:	20.051 mm/s (SP); 10.0255 mm/s (LP)
Maximum recording time:	3 hours with P5-90 video cassette
Lens:	f/1.2 6X power zoom, 8—48mm focal length, macro mechanism
Focusing system:	Active autofocus, manual focusing possible
Minimum focusing distance:	1.2m
Minimum illumination:	8 lux
Filter diameter:	46mm
Electronic viewfinder:	0.7-inch monochrome CRT
Microphone:	Uni-directional electret condenser microphone
Input level:	Audio: -10dBV/more than 47k Ω , unbalanced (Adapter terminal), -64dBV/600 Ω , unbalanced, 3.5mm mini-jack (External microphone jack) Video: 1Vp-p/75 Ω , unbalanced (Adapter terminal); Audio: -10dBV/less than 3k Ω , unbalanced (Adapter terminal), -22dBV/8 Ω , unbalanced (Earphone jack)
Output level:	Video: Better than 47dB (luminance)
Signal-to-noise ratio:	30Hz—14kHz, \pm 3dB (line)
Audio frequency response:	145 x 288 x 153mm
Dimensions (W x D x H):	1.6kg without battery pack
Weight:	

**Canon recommends metal particle tape.
Subject to change without notice.
Errors and omissions excepted.
Weight and dimensions are approximate.*

Canon

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